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Vol. XXIV, No. 9 SEPTEMBER, 1935

JOURNAL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION

TRADE MARK

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THE 84th ANNUAL MEETING OF THE AMERICAN PHARMACEUTICAL ASSOCIATION WILL BE HELD IN DALLAS, TEXAS, 1936.

The 1936 Meetings of the American Association of Colleges of Pharmacy, the National Association of Boards of Pharmacy, Conference of Pharmaceutical Association Secretaries, of the Pharmaceutical Law Enforcement Officials and the Plant Science Seminar will also be held in Dallas, Texas.

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E. F. KELLY, Secretary,
2215 Constitution Ave.,
Washington, D. C.

A group of A. Ph. A. members and members of their families in Portland, Oregon, Multnomah Hotel.

HARVEY A. HENRY.

JOURNAL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION

VOL. XXIV SEPTEMBER, 1935 No. 9

HARVEY A. HENRY.

Harvey Abner Henry, president of the National Association of Retail Druggists, 1934–1935, was born in Lebanon, Pa., February 16, 1884. He received his early education in the schools of Lebanon and, thereafter, was apprenticed to Joseph L. Lemberger, a former president of the AMERICAN PHARMACEUTICAL ASSOCIATION (1905–1906).

Mr. Henry matriculated at the Philadelphia College of Pharmacy and Science and was graduated with the degree of Doctor in Pharmacy, in 1906. After graduation he returned to the pharmacy of Joseph L. Lemberger and remained with his preceptor until 1913, when he removed to California where he has since then made his home in Los Angeles. In 1919, he opened a review course in Pharmacy to assist candidates in preparing for their State Board examinations.

In 1921, he formed a partnership with Glenn F. Coleman under the firm name of Henry & Coleman; they operate two pharmacies at present in the W. P. Story Building and an upstairs Prescription Pharmacy, and another in the Professional Building, at 6th and St. Paul streets—a corner professional pharmacy.

In 1929, Mr. Henry was elected president of the Southern California Pharmaceutical Association and, in 1933, the California Pharmaceutical Association honored him with the presidency. His advancement by the National Association of Retail Druggists began in 1932, by election as third vice-president and the following year as second vice-president. In 1934, Mr. Henry was elected chairman of the Executive Committee of the N. A. R. D.; in the following year he was elected president of that organization and he presides this month at the Cincinnati meeting.

Mr. Henry is vice-president of Los Angeles Wholesale Drug Company.

EDITORIAL

E. G. EBERLE, EDITOR 2215 Constitution Ave., WASHINGTON, D. C.

MEMBERSHIP.

DR. ERNEST LITTLE points the way to another great coöperative effort which can be executed by the present members of the AMERICAN PHARMACEUTICAL ASSOCIATION. The need for this organization is well established. The importance of an aroused, active and representative membership is too well recognized to dwell upon it. To bring about the realization of this and improve our position Dr. Little places the responsibility, or divides it, equally and rightly, and says, "Let's see what we can do." His plan furnishes each member an opportunity to do his full share by securing at least one new member. This should not be difficult to do. It is the way to a greater and more useful AMERICAN PHARMACEUTICAL ASSOCIATION. I hope each member will do his share and do it promptly. — P. H. COSTELLO, *President.*

LET'S SEE WHAT WE CAN DO.

Some 400 members have just returned from the Eighty-Third Annual Meeting of the AMERICAN PHARMACEUTICAL ASSOCIATION which was held in Portland, Oregon, from August 5th to 10th.

These members have returned home with greatly varying impressions of the importance of what transpired at this convention and I trust with many and varied ideas as to what can be done to further increase the usefulness of our ASSOCIATION to pharmacy; how to set about performing this very important service.

The report of one of our officers called attention to the fact that at the present time our ASSOCIATION is made up of but about 3000 members.

It is discouraging and somewhat surprising to learn that less than 3% of the 132,000 registered pharmacists in the United States are direct members of the AMERICAN PHARMACEUTICAL ASSOCIATION. I recognize that all state association members are affiliated members of the A. PH. A.

I would feel that I have done nothing of a constructive nature if I did no more than call to your attention the fact that our membership is exceedingly small. The important questions involved are: "Why are so few of our registered pharmacists members of the AMERICAN PHARMACEUTICAL ASSOCIATION?" and "What can be done to improve existing conditions?"

We are all in agreement, I am sure, as to the need and absolute necessity of a strong parent organization to head up and direct all pharmaceutical activities, to constantly increase and improve the service which pharmacy is offering, and to increase the effectiveness and well-being of its practitioners. The small membership of the AMERICAN PHARMACEUTICAL ASSOCIATION is not due to the fact that there is no need for an organization of its scope and purposes.

It is not due to lack of talent and ability within the organization. At the Portland meeting our members had the privilege of listening to more than 300 scientific papers, committee and officers' reports, before the various divisions of the AMERICAN PHARMACEUTICAL ASSOCIATION and its related organizations. As

a group, these reports were of high quality. They indicated, very definitely, that we are possessed of our full share of talent and ability and that these talents are being successfully and effectively applied in a variety of ways and in many directions. The necessary talent is within our ranks.

I believe also that you will agree that the deplorably small membership in our ASSOCIATION is not due to lack of interest or effective endeavor on the part of our ASSOCIATION officers, the most important of whom is the secretary. It requires but one visit to our secretary's office to impress upon you his many and varied activities in behalf of pharmacy and the conscientious and efficient manner in which he is devoting himself to ASSOCIATION affairs.

The difficulty, as I see it, rests with the individual members of our ASSOCIATION; with you and with me. I know that such a statement is never a popular one. I know it may be resented by some individuals. My desire, however, is to prove helpful rather than complimentary.

Well do I remember the determined drive Dr. Robert L. Swain made during his term of office as president of the AMERICAN PHARMACEUTICAL ASSOCIATION to increase our membership. The fact that the results were disappointing is not to Dr. Swain's discredit. He pointed the way and organized the drive. In this detail his experience was the same as any other efficient leader would have encountered under such circumstances. Without the active support and coöperation of the individual members even the most effective and dynamic leader can accomplish but little.

My challenge is, let us stop shifting responsibilities to the shoulders of others—"Let's See What *We* Can Do."

There are few, if any, members of our ASSOCIATION who could not, with a minimum amount of effort on their part, secure at least one new member before the next annual meeting of the AMERICAN PHARMACEUTICAL ASSOCIATION. It is possible that there are some members of our ASSOCIATION who are so situated that they could not induce even one pharmacist to join our ranks. This condition is more than offset by the fact that many of our members could, with a reasonable amount of effort, secure a dozen new members during the current year. What fine coöperation we would be showing President Costello if we, without any effort on his part, doubled the membership of the AMERICAN PHARMACEUTICAL ASSOCIATION during his administration, thus leaving him free to devote his time to problems of administration and organization. It can be done. Are *we* interested enough to do it?

I am to-day sending the following note:

Dr. E. F. Kelly, Secretary,
AMERICAN PHARMACEUTICAL ASSOCIATION,
Washington, D. C.

Dear Dr. Kelly:

I shall endeavor and persistently strive to bring not less than six new members into the A. PH. A. before the 1936 annual meeting. You may consider me definitely obligated to the above responsibility.

Yours for Pharmacy,
ERNEST LITTLE.

The membership year is the calendar year. Under the By-Laws membership taken between June and January may also cover the succeeding calendar year. It is, therefore, advantageous to join at this time. The Report of the Progress of Pharmacy including the Pharmaceutical Abstracts heretofore appearing in the YEAR BOOK, is now printed monthly in the JOURNAL, bringing this helpful review of the literature of pharmacy to the members each month. The JOURNAL is included in the dues.

I recommend and urge that all Sections of the A. PH. A. adopt as one of their major projects for the year, the doubling of their membership by August 1, 1936, and that the undertaking be initiated by securing from each member of their section the promise that he will faithfully strive to obtain at least one new member for the A. PH. A. as his contribution to this most worthy project.

I recommend that the various Branches urge their members to send to Secretary Kelly a letter similar to, if not identical with, the one given above, substituting any number which they may desire for the word "six," found in the first sentence of the letter.

I recommend also that during this "membership year" the JOURNAL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION publish in a prominent place the names of our new members and the name of the member responsible for each new membership. It might be advisable also to publish each month an "Honor Roll," containing the names of the ten members of our ASSOCIATION who have secured the greatest number of new members and the record of each to date.

To further stimulate this effort for membership, I am glad to announce that the Northern New Jersey Branch of the AMERICAN PHARMACEUTICAL ASSOCIATION will be pleased to present a pennant, each year for the next two years, to the Branch showing the highest percentage gain in membership during the year. This pennant might appear somewhat as follows:

Blank Pharmaceutical Branch

Blue Ribbon Branch

of

THE AMERICAN PHARMACEUTICAL ASSOCIATION

1935–1936

Class A

I suggest that this pennant be prominently displayed at the annual convention and all the general meetings of the A. PH. A. and that it then becomes the permanent possession of the successful Branch, which Branch shall have the privilege of having the pennant on display in the Headquarters Building in Washington, D. C., during the remainder of the year if desired.

I feel that two, or possibly three such pennants should be awarded each year to Classes A, B and C, depending upon the size of the Branches. Such a classification might make an award, based upon percentage of increase in membership more equitable. I would suggest also that no Branch be allowed to be the donor

of a pennant for more than two consecutive years, providing another Branch desires such privilege. Other necessary details can easily be worked out.

It is possible that there is but little of merit in the above suggestions. If such be the case, this article may still serve a useful purpose, provided it stimulates action on the part of our members and prompts some one to submit a better plan which can be put into immediate operation.

It is time to stop merely bewailing our small membership and weakly pointing the finger of responsibility at our national officers. Let us place the responsibility where it rightfully belongs—on the shoulders of the individual members and then "Let's See What *We* Can Do." What do you think? May we have your comments and suggestions?

THE EDUCATIONAL VALUE TO BE DERIVED FROM THE TRAVEL TO THE CONVENTIONS OF THE AMERICAN PHARMACEUTICAL ASSOCIATION.

ASIDE from the beauties of the section in which the Portland meeting was held, and its unsurpassed scenery, those who were privileged to attend were brought in contact with the history of the Northwest United States made known and resourceful by the Lewis and Clark Expedition.

In this issue of the JOURNAL a paper on the "Badianus Manuscript" is published—the original is in the Vatican Library and is believed to be the earliest herbal produced on this side of the Atlantic. Dr. Emily Walcott, of Johns Hopkins, Baltimore, is the author of a monograph concerning the Manuscript, an Aztec herbal, composed in the year 1552 in the famous College of Santa Cruz at Tlaltelolco, Mexico City.

The contribution is of interest because it deals with research in Mexico of about the time when the resources of this part of the New World were brought to the attention of Charles V, during whose reign the Spaniards conquered Mexico. In 1936 the AMERICAN PHARMACEUTICAL ASSOCIATION will hold its annual meeting in a section of the United States, celebrating the centennial of its independence from Mexico, a neighbor Republic with which cordial relations exist.

The meeting next year will make the members acquainted with the varied resources of the Southwest, developed by pioneers whose names reflected credit and honor, predominant among them—General Sam Houston with a splendid record as a member of Congress from Tennessee, Governor of that State; President of Texas, its Senator and its Governor. A man whose outstanding characteristics were honesty and loyalty, interested in the development of resources, in the establishment of educational institutions, he was one of the founders of Baylor University. Here lived for a time "O. Henry," a druggist in his earlier years. The Pharmacy School of the University of Texas is well equipped and its home is in one of the larger buildings on the Campus at Austin.

Several missions of the Franciscans—who in the earlier years cared for the sick and dispensed medicines—are still in a good state of preservation in San Antonio.

Mexico is launching an educational experiment in San Antonio—a library is to be established, partly supported by the Mexican Department of Education which will supply books and a librarian. It is hoped to expand the library into a cultural

center for Mexicans and furnish them with the means to enjoy their language literature.

Every meeting brings opportunities for further acquaintance with our history, resources and contributions of the section to the wealth and health of our people.

THE PRESCRIPTION DEPARTMENT.

MUCH has been said and written about the "Open Prescription Department." Included in an article of a recent issue of the *Pharmaceutical Journal of New Zealand* is a reference to the pharmacy of the late John F. Hancock, Baltimore, a former president of the AMERICAN PHARMACEUTICAL ASSOCIATION. A picture of the interior is shown—the pharmacy is now owned by W. F. Thiede.

The following, from reminiscences of the former (*about 1866*), will be of interest, communicated in a letter received from James E. Hancock, son of the above named:

> . . . "The store was newly furnished in walnut with side glass cases and, back of the archway, the rear room was fitted up for prescription work with a central semi-circle of shelves for small bottles containing duplications from the large shop bottles in the front room. The plans were carefully considered with a view to convenience, economy of space and safety to the dispenser. The prescription counter was placed in full view of those in the front room, but sufficiently retired to avoid conversation while prescriptions were being compounded. . ."

It may be of further interest that Mr. Thiede, the present owner, was asked why he had not remodeled the pharmacy and his reply was—"that the pharmacy was up-to-date."

Those who desire to read the article[1] referred to will find much of interest and value; the article is illustrated by drawings, drawn to scale. A purpose of this comment is to present the ideas, on a subject of present-day interest, of a pharmacist who devotedly served his profession and was a faithful member of the ASSOCIATION for more than sixty years.

IT IS DOING, AS WELL AS THE AIMS AND PURPOSES.

IT IS ALL very well to contend that pharmacists should practice pharmacy—all will agree to that—but the conditions are with us that limit the opportunities. This fact should impress the thought to shape the status so that a greater number can put their aims and purposes into practice.

There are some, perhaps many, who prefer to conduct what is known as the modern drug store, but can pharmacy attain to a higher professional standard thereby? There will be rightful differences of opinion. Many papers are written which seek to build on the foundation of existing conditions, but it is necessary to shape them with the end in view to remove the obstacles that hinder advancement; adherence to the code of ethics is an essential.

The schools of pharmacy had their inception, not by replacing the drug stores, but by giving those in the practice of pharmacy an opportunity for a deeper knowledge of its activities and derive a living income therefrom.

The AMERICAN PHARMACEUTICAL ASSOCIATION had its beginning, because the founders realized that inferior materia medica and lack of uniformity in prepara-

[1] PROCEEDINGS, A. PH. A., 1872, pages 192–200.

tions interfered with rendering the right kind of service to the public and added directly or indirectly to the cost of production; the results of the efforts were better service, greater uniformity and an improved materia medica, and should have resulted in restricting the dispensing of medicines and sale of medicinal products to druggists. But as the latter recognized in the sale of side-lines, many of them foreign to their business or profession, an opportunity for increasing sales volume, so merchants ventured into merchandising medicines and products that properly belong to the drug stock. No exception is taken for the inclusion of side-lines nor is this intended for a discussion of the rights of merchants, for which the public is largely responsible.

Volume increase and profit are closely related, hence the step to competition, fair and unfair, by those who should seek, as far as is right, to coöperate. These practices have entered all lines and resulted in unfair means, which for the good of all should be corrected, for the nation and state are dependent on the relative prosperity of all classes and individuals.

An effort has been made in a very brief way by this comment to outline the developments which have brought about a more or less unsatisfactory status by removing from our business life a most valuable class of citizens, or at least reduced their number by bringing about unsatisfactory trade conditions.

Steps have been taken to correct unfair practices by states, but the federal government should join in the effort, for the prosperity of the nation depends upon that of the individuals engaged in whatever pursuit—success depends on proper relationship.

A STUDY OF THE ASSAY OF ACONITE AND THE STABILITY OF ITS PREPARATIONS.

Investigators of the stabilization of Aconite preparations have reported that increased acidity of the preparation promotes stability. The statement has been checked in this paper and has been found to be correct. A chemical assay procedure for determining the amount of aconitine present in Aconite preparations has been worked out based on the dissociation constants of the alkaloids involved. The assay procedure is of such nature that by use of certain values obtained in the assay procedure, aconitine may be calculated in milligrams from an equation the derivation of which is given in full.—George L. Baker and C. B. Jordan in a paper read before Scientific Section, A. PH. A., Portland meeting, 1935.

APOTHECARY SHOPS OF COLONIAL TIMES.

A compilation of scattered historical data published in pharmaceutical literature and other sources of the past few years and describing apothecary shops, proprietors and distinguished customers of colonial days. The oldest American apothecary shop still in existence and doing business is the Rau Pharmacy in Bethlehem, Pa. The oldest record of an apothecary shop in America (1646) is that of Wm. Davies of Boston, Mass. This was probably the first store devoted exclusively to Pharmacy in America.—Abstract of a paper presented by Millicent R. LaWall at the Portland, A. PH. A., meeting.

SCIENTIFIC SECTION

BOARD OF REVIEW OF PAPERS.—*Chairman*, F. E. Bibbins, George D. Beal, L. W. Rising, H. M. Burlage, L. W. Rowe, John C. Krantz, Jr., Heber W. Youngken.

(*To be revised.*)

A STUDY OF THE U. S. P. THYROID ASSAY.*,[1]

BY GEO. D. BEAL[2] AND CHESTER R. SZALKOWSKI.[3]

AUTHORS' NOTE: This paper is a drastic condensation of a lengthy report submitted to the United States Pharmacopœial Committee of Revision and presents only the authors' conclusions. JOURNAL limitations have made it necessary to omit all detail and the comprehensive tables. The senior author will be glad to furnish such details to any interested person.

During the past year an unusual amount of criticism of the U. S. P. X Thyroid assay has been heard, due primarily to a difference of interpretation of method in a case in Federal Court. This led to a brief but critical study of the procedure, covering a period of three months. Sixteen samples of desiccated thyroid or compressed tablets thereof were furnished by producers, who also favored us with criticisms and suggestions regarding the U. S. P. X method. In view of the limited time available, no thought was given to the determination of thyroxine content, but our attention was limited to the determination of the iodine content. Also, in view of the fact that the U. S. P. method was approved in principle by the manufacturer's chemists who dealt most extensively with this drug, no attempt was made to devise a new procedure. We, on the contrary, directed all of our energies to the searching out of sources of error in the method, and the amplification of the directions in order that the pitfalls therein might be avoided.

Practically all of the methods proposed for this assay have been based upon the original work of Baumann (1). Such an assay consists of three stages:

1. Fusion with alkali, destroying the organic matter and binding the iodine as an iodide.
2. Oxidation of the iodide to iodate.
3. Iodometric determination of the iodate.

The Fusion Mixture.—Baumann destroyed organic matter by fusion with sodium hydroxide and nitrate. Kendall (2) used both a solution of and solid potassium hydroxide with potassium nitrate. Kelly and Husband (3) used a modification of Kendall's procedure, while Grutzner (4) used a mixture of sodium hydroxide and peroxide. Kraus (5) and Hunter (6) used a mixture of sodium and potassium carbonates and potassium nitrate for the fusion, while Volhard (7), Hofmeister (8), Neuman and Meinertz (9), Oswald (10) and Middleton (11) have studied the different alkalies and their use in organic fusions. Harden (12) proposed the use of the Eschka fusion mixture of sodium carbonate and magnesium oxide as used for the determination of sulphur in coal, in which atmospheric oxygen serves as the oxidizing ingredient.

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* Scientific Section, A. PH. A., Portland meeting, 1935.

[1] Contribution from the Mellon Institute of Industrial Research, Pittsburgh, Pa. Published by permission of the Chairman, Committee of Revision, United States Pharmacopœia.

[2] Assistant Director, Mellon Institute.

[3] Formerly Assistant, Department of Research in Pure Chemistry, Mellon Institute.

U. S. P. X adopted Hunter's mixture, consisting of 138 parts by weight of anhydrous potassium carbonate, 106 parts of anhydrous sodium carbonate and 75 parts of potassium nitrate. This mixture forms during fusion the eutectic corresponding to potassium sodium carbonate, the fusion point of which is lower than either of its components, and does not have the tendency to creep and spatter that occurs when a caustic fusion mixture is used.

Fusion without an active oxidizing agent may produce apparently complete decomposition, but the sulphur of the tissue protein is not completely oxidized, so that the resulting solution either liberates hydrogen sulphide or precipitates sulphur on further treatment.

Temperature and Time of Fusion.—The first defect in the U. S. P. X direction is: "Heat the crucible over a free Bunsen flame until no further carbonization is observed." Some analysts obeying this may use a strong and rapid heating while others may start with a very low flame and gradually increase the heat to the point of fusion. Results may vary because of this. Hunter recommended rapid fusion because it is safe as well as convenient. He did not observe any loss of iodine when heating thus, but found in controls that when heating was spread, by gradual increments, over one and one-half hours, results were considerably too low. Oswald also believed that rapid oxidation is least likely to cause a loss of iodine.

We find that either too rapid or too slow heating gives results that depart from the truth. Too rapid combustion causes loss of iodine by volatilization, as does a lower but much slower combustion. In our experience, the proper heat will bring the crucible and mass to a dull red in ten minutes, while holding this temperature for an additional ten minutes will yield a white fusion mass, the edges of which will have just begun to melt. No free carbon will be present, so that the solution will not require filtration, and no incompletely oxidized sulphur will be left. The mass, not having fused in its entirety, is friable and easily brought into solution in hot water.

Other advantages of the carbonate-nitrate fusion are apparent here. Carbon always remains after the caustic fusion unless a very large excess of nitrate is used. The Eschka mixture does not form a clear solution until it is acidified. The Eschka mixture also produces decided intumescence during heating.

Oxidation of Iodide to Iodate.—This may be accomplished with such oxidizing agents as bromine, chlorine water, solutions of hypochlorites, and potassium permanganate. Of the halogen-oxidizing agents, bromine is perhaps more widely used, although it has many disadvantages, such as:

(*a*) It invariably contains iodine, and only painstaking washing with water will remove this.

(*b*) Some of the nitrate forms nitrite during fusion, and this in turn reduces bromine to bromide, which may interfere during the later treatment.

(*c*) Excess bromine is removed by boiling with only great difficulty. Therefore an agent such as phenol or salicyclic acid must be added to precipitate the bromine.

No one of our experiments involving the use of bromine was as successful as the U. S. P. procedure. We are confident that the use of this oxidizing agent requires much more attention than does that of sodium hypochlorite.

Potassium permanganate is used in the U. S. P. thyroxine assay, which is al-

most a micro-determination. An excess of permanganate must always be removed by another agent. Manganese under some conditions may catalyze the atmospheric oxidation of iodine solutions, and has been known to react with iodates.

Chlorine water and solutions of hypochlorites have one disadvantage, they may contain chlorates. Chlorine water is seldom used for the oxidation of iodide to iodate. Sodium hypochlorite, on the other hand, has two distinct advantages; *first*, it oxidizes iodide to iodate in alkaline solution; *second*, it supplies an excess of chlorine which prevents the loss of iodine upon acidification.

The use of sodium hypochlorite introduces considerable quantities of chloride. Later hydrochloric acid is liberated. Iodic acid may react with hydrochloric acid as follows:

$$HIO_3 + 5HCl \longrightarrow 2Cl_2 + ICl + 3H_2O.$$

This not only requires a large excess of hydrochloric acid but the concentration must be quite high. Such a condition is practically impossible to attain in this assay. Even on addition of sodium chloride no measurable loss of iodine occurred.

The formation of chlorates in hypochlorite solutions depends upon the temperature. We have found that if the temperature of the solution obtained from the fusion exceeded 30° C., our results were higher than when the temperature at addition of the hypochlorite was 15–20° C. This is quite likely due to the formation of chlorate in the hypochlorite solution.

By means of Wilson's (13) method for the determination of hypochlorites by direct titration with sodium thiosulphate in the presence of acetic acid, a method in which chlorates remain unaffected, we have found that the rate of change from hypochlorite to chlorate is somewhat slower in a solution prepared from bleaching powder and sodium carbonate than in one prepared from sodium hydroxide and chlorine. This, we believe, contributes to the sharper end-point in the final titration, for the chlorate may perhaps oxidize iodide at that time. Such an error is minimized if a blank determination is carried through, but it is our opinion that even high blanks should be avoided.

We would say that the greatest differences of opinion among authors have to do with such essential factors as the acidity of the solution, the nature of the oxidizing agent, and the method of removing the excess. Kendall and Kelly (*loc. cit.*) are at absolute variance on the question of acidity if bromine be used as oxidizing agent; Kendall claiming that the p_H during bromine removal is of greatest importance, Kelly that it is a matter of little moment. We think that when the U. S. P. procedure of oxidizing with hypochlorite is followed, the degree of acidity during the removal of excess chlorine is of considerable importance, although perhaps not so much so as the duration of or volume during boiling.

U. S. P. X directs:

> "Treat the mixture with enough phosphoric acid, diluted with an equal volume of distilled water, to produce an appreciable yellow tint of free chlorine, add about 10 cc. more of phosphoric acid, diluted with an equal volume of distilled water, etc."

Such a procedure is very uncertain since this so-called yellow tint is not easily distinguished as a change from the slight tint of the hypochlorite solution. Guided by tint alone, we have been quite unsuccessful in gaging the acidity of our solution.

On the other hand, too large an excess of acid may cause the liberation of iodine from the iodate on boiling or it may interfere with the proper starch-iodine end-point. The acidity should be controlled by maintaining reasonable precision in the quantities of fusion mixture and of hypochlorite solution used. If one takes altogether 20 Gm. of fusion mixture, as directed, and 50 cc. of freshly prepared chlorinated soda T.S., 60 cc. of dilute phosphoric acid, prepared by diluting U. S. P. acid with an equal volume of water, is ample.

U. S. P. X then directs: "Boil for half an hour or until the volume has been reduced to 150 cc." Hunter observed that after boiling for ten minutes the vapor gave no blue color wth starch-iodide test paper, and from this point he heated for fifteen minutes longer. We have evaporated such solutions until the volume was below 150 cc., in some cases losing iodine and in others finding chlorine still in the solution. We believe that the volume before evaporation should be at least 300 cc. and at the end not less than 150 cc., preferably 175 cc. The time of boiling ought to be not less than one and one-half hours, although no blue color is observed with starch-iodide paper held in the neck of the flask after one hour's boiling. To insure complete removal of chlorine, the solution ought to be boiled for at least one-half hour after no blue color is obtained.

Titration of the Iodine.—Obviously the potassium iodide solution added to reduce the iodate must itself be free from iodate. Too little attention, however, is often paid to the starch T.S. According to U. S. P. X, the amount might be regarded as unlimited. Too great an excess will give a reddish color to the solution that will persist after the blue has been discharged. Hence, just enough should be added to give a sharp end-point, and in our experience 3 cc. is ample, to be added just before the conclusion of the titration. Furthermore, starch T.S. prepared from pure arrowroot starch is the most sensitive and gives the sharpest end-point. This has been established by series of comparative titrations in which also potato, corn and soluble starches were used. The use of arrowroot starch T.S. is perhaps the one point on which there is nearly unanimous agreement among workers on thyroid.

Complaints are frequently heard about the fading or slipping of the end-point. It can be discharged and will return, and this may be repeated several times. Some believe that this may be due to the presence of iron or manganese. Hunter has shown that the presence of iron in the thyroid, or added in reasonable amounts before the fusion, does not affect the end-point. If manganese be present, for example, in the hypochlorite, the end-point will not be sharp and the results probably high.

If all of the factors herein discussed are carefully controlled, a sharp end-point should be obtained. We believe that if the solution does not show a return of the blue color until after at least thirty seconds, the true end-point has been reached. We have also found that traces of chlorine, bromine, or nitrous acid in the laboratory atmosphere may influence the slipping of the end-point.

A Blank Test.—U. S. P. X does not require that a control test be made. We believe that even if the purity of the reagents is assured, it is still important to accompany each set of determinations with a control test, and to apply the correction so established. The control test must start with the fusion, and may if desired be performed upon reagent casein to more nearly simulate the actual fusion.

The control will also take cognizance of the bulk of chlorate present. It must be constantly borne in mind that one is performing almost a micro-determination, and that a two-hundredth normal solution is being used in the titration. A blank of from 0.4 to 0.6 cc. of thiosulphate at least will be regularly obtained by the experienced operator, which, on a 1-Gm. sample of thyroid, means over 3 per cent of the total iodine present.

METHOD RECOMMENDED FOR U. S. P. XI.

The method recommended for incorporation in U. S. P. XI agrees in principle with that official in U. S. P. X. The changes that have been made are for the purpose of clarifying the directions and eliminating the uncertainties therein.

Procedure.—Thoroughly mix 1 Gm. of Thyroid, finely powdered and accurately weighed, with 15 Gm. of an intimate mixture of 138 parts by weight of anhydrous potassium carbonate, 106 parts of anhydrous sodium carbonate and 75 parts of powdered potassium nitrate in a nickel crucible of about 125 cc. capacity, and spread an additional 5 Gm. of this mixture evenly over the surface. Heat the crucible with the flame of a Bunsen burner at such a rate as to attain a dull red color in ten minutes, and continue the heating at the same temperature for an additional ten-minute period. At the end of this time the carbonaceous material is completely oxidized and the mixture has just begun to melt around the wall of the crucible. Cool the fusion mixture and place the crucible and contents in a 400-cc. beaker. Add 150 cc. of hot distilled water and stir until the contents of the crucible are completely dissolved. Transfer the solution to a 500-cc. Erlenmeyer flask and rinse the beaker and crucible with four 10-cc. portions of hot water, adding the rinsings to the solution in the flask. Cool the solution to 15° C. and add 50 cc. of freshly prepared chlorinated soda T.S. Cautiously add 60 cc. of diluted phosphoric acid (made by mixing equal volumes of phosphoric acid and distilled water), place the flask on a hot plate and boil the solution until a strip of filter paper moistened with starch-potassium iodide T.S. does not become blue when held in the vapor in the mouth of the flask. The final volume of solution in the flask must be about 175 cc., and distilled water must be added, if necessary, during the boiling to maintain this volume. Cool the solution to about 25° C. and add 10 cc. of a freshly prepared aqueous solution of potassium iodide (1 in 100). Titrate the liberated iodine with two-hundredth-normal sodium thiosulphate, adding 3 cc. of starch T.S. as indicator shortly before the end of the titration. Conduct a blank determination with the same quantities of the same reagents and subtract the volume of sodium thiosulphate consumed from that consumed by the Thyroid. Each cc. of the corrected volume of two-hundredth-normal sodium thiosulphate is equivalent to 0.0001058 Gm. of iodine.

THE ASSAY OF COMPRESSED TABLETS OF THYROID SUBSTANCE.

As a result of our study, it is shown that compressed tablets of thyroid can be assayed by the same method that is used for desiccated thyroid substance. Because of the presence of diluents in the tablets, a larger weight of the sample must be taken for the analysis. The quantity of oxidizing agent (potassium nitrate) in the 20 Gm. of fusion mixture used is sufficient to completely decompose the diluents present, but the total time of heating should be extended to twenty-five minutes. No filtration of the solution is required after the fusion has been taken up in water. Although no monograph for thyroid tablets is included in U. S. P. XI, directions for their assay are presented here.

Procedure.—Select 50 perfect tablets, or enough more than this number to make at least 3.5 Gm. of sample, weigh accurately and calculate the average weight per tablet. Finely powder the tablets in a clean, dry mortar. Mix 1.5 Gm. of the powdered tablets, accurately weighed, with 15 Gm. of an intimate mixture of 138 parts by weight of anhydrous potassium carbonate, 106 parts of anhydrous sodium carbonate and 75 parts of powdered potassium nitrate in a nickel

crucible of about 125 cc. capacity, and spread an additional 5 Gm. of this mixture evenly over the surface. Heat the crucible with the flame of a Bunsen burner at such a rate as to attain a dull red color in ten minutes, and continue the heating at the same temperature for an additional fifteen-minute period. Proceed as directed under the assay of thyroid, beginning with "Cool the fusion mixture." One cc. of two-hundredth-normal sodium thiosulphate is equivalent to 0.0001058 Gm. of iodine. Divide the weight of iodine found by the number of tablets represented by the weight of sample taken to find the weight of iodine per tablet.

Following these procedures as outlined, we have examined sixteen lots of desiccated thyroid powder and compressed, uncoated, tablets from various manufacturers. The results that we have obtained are found in Table I.

TABLE I.—COMPARISON OF IODINE CONTENT OF THYROID.

Sample.	Producer's Claims.	Laboratory Results by Revised Method.
1	0.218 per cent	0.236 per cent
2	0.0155 mg./tab. (Tablet)	0.0154 mg./tab.
3	0.132 mg./tab. (Tablet)	0.129 mg./tab.
4		0.202 per cent
5		0.202 per cent
6	0.40 per cent	0.367 per cent
7	0.0612 per cent (Tablet)	0.061 per cent
		0.128 mg./tab.
8	0.22 per cent	0.176 per cent
9	0.1408 mg./tab. (Tablet)	0.124 mg./tab.
		0.0757 per cent
10	0.0215 per cent (Tablet)	0.090 per cent
		0.0541 mg./tab.
11	0.425–0.422 per cent	0.423 per cent
12	0.2868 mg./tab. (Tablet)	0.240 mg./tab.
		0.117 per cent
13	0.240 per cent	0.223 per cent
14		0.119 mg./tab.
		0.0375 per cent
15	0.2251 per cent	0.237 per cent
16	0.0993 per cent (Tablet)	0.0994 per cent
		0.104 mg./tab.

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Pharmacy Week will be observed during the week of October 21, 1935.

SOME PROPERTIES OF ERGOSTETRINE.*

BY MARVIN R. THOMPSON.[1]

Since reporting the isolation of a new crystalline specific alkaloid of ergot (1), it becomes possible to describe some pharmacological and chemical properties of this "X-alkaloid" in pure crystalline form, earlier publications (2) having dealt with the amorphous substance still containing some ergotoxine as impurity. The history of the discovery of this new "X-alkaloid," named "ergostetrine" by the author, with the relationship of ergostetrine to the subsequently reported "ergometrine" of Dudley and Moir (3) and the "ergotocin" of Kharasch and Legault (4), is reviewed elsewhere (5).

ISOLATION AND CHEMICAL PROPERTIES (6, 7).

A 10-Kg. quantity of good quality ergot was exhaustively extracted with alcohol and the alcohol was removed at a temperature not exceeding 40° C. under reduced pressure. The resulting gummy mass was thoroughly washed with many small portions of acidified water to remove the impure ergostetrine. The aqueous washings were concentrated under reduced pressure, alkalinized to litmus with ammonia, and exhaustively shaken out with many small portions of chloroform. Removal of the organic solvent *in vacuo* resulted in crystallization of ergostetrine. The crystals were washed with chloroform and dried *in vacuo* over calcium chloride. The yield was 983 mg. These crystals melted with decomposition at 148° to 150° C., and exhibited a specific rotation[2] (0.1% solution in chloroform containing 5% alcohol to increase solubility) of $[\alpha]_D^{25} = -45°$ to 55°. One recrystallization from hot benzol raised the decomposition point to 152° to 154° C. Repeated recrystallization (5 times) from benzol resulted in white radiating, doubly refractive needles up to $1^1/_4$ inches in length, which, when placed in a bath at 154° C. and slowly heated, melted with decomposition at 160° to 162.5° C., and whose specific rotation (0.2% solution in ethyl alcohol) was $[\alpha]_D^{30} = +50°$ (±10° because of weak solution used). Aqueous solutions were alkaline in reaction and also dextro-rotatory, as were solutions in methyl alcohol. Chloroform and benzol solutions were lævo-rotatory. Solutions of either the base or the salts exhibit a high degree of fluorescence. The base is sparingly soluble in water, chloroform and benzol, and is considerably more soluble in ether, ethyl and methyl alcohols. The salts are uniformly highly soluble in water, but much less so in common organic solvents. More precise determinations must await the availability of larger quantities of ergostetrine. Its presence in ergot to the extent of 0.05 to 0.2 mg. per Gm. introduces great difficulties in securing working quantities from small-scale laboratory production.

As to the molecular composition of ergostetrine, analyses mentioned in an earlier report (1, 2) showed the substance to consist of C, H, O and N, and that the ratio of these elements to one another was roughly similar to that of hitherto identified alkaloids (ergotoxine, ergotamine, sensibamine, etc.) but that the size of the molecule was definitely smaller than that of the known alkaloids. Due caution must be observed in assigning an empirical formula to the new alkaloid because,

* Scientific Section, A. PH. A., Portland meeting, 1935, skeletonized by author to facilitate publication.

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[2] I am indebted to Prof. G. L. Jenkins for coöperation in determinations of optical activity.

though simpler in composition than the other alkaloids of ergot, it is still relatively complex. The crystals form in combination with solvent of crystallization, and the extreme difficulty with which the solvent of crystallization can be safely expelled attaches a definite element of doubt to any analytical results.

Dudley and Moir (3, 8, 9) presented analyses on their ergometrine, Kharasch and Legault (10) on their ergotocin, Stoll and Burckhardt (11) on their ergobasine, and Jacobs and Craig (12) on their alkaloid, all confirming my analyses showing the qualitative composition of the molecule and that the molecular weight is definitely less than that of either ergotoxine or ergotamine. It is the belief of the writer that ergostetrine, ergometrine, ergotocin and ergobasine are one and the same substance. All were independently obtained by chemical methods which, though differing in details, proceed in the same chemical direction, ultimately obtaining the crystals of the free base from chloroform, benzol, the chlor-ethylenes, etc., taking advantage of the lesser solubility of the new alkaloid as compared to the other alkaloids in these solvents. The pharmacologic and clinical activity, optical activity, decomposition point, solubility and color reactions, all tend to establish that the four names have been applied to the same alkaloid, in spite of the variously reported minor differences which are very probably due to differences in the degree of purity of the crystals studied. The empirical formula indicated by more recent analyses of ergostetrine (base) is in excellent agreement with that of Stoll and Burckhardt for ergobasine ($C_{19}H_{23}O_2N_3$), which is the same as that found by Jacobs and Craig for their product. The formula suggested with reservation by Kharasch and Legault for ergotocin ($C_{21}H_{27}O_3N_3$), as pointed out by Jacobs and Craig (12), differs from the above formula by C_2H_4O (or C_2H_5OH, alcohol?), suggesting that the higher molecular weight may be due to analyses of material still containing some solvent of crystallization. Owing to the difficulties of completely freeing from solvent of crystallization, this lies well within the realm of possibility. The somewhat larger molecule suggested by the analyses of ergometrine by Dudley and Moir probably resulted from the same difficulty, or to some remaining impurity.

COLOR REACTIONS OF ERGOSTETRINE.

As established in a previous report by the writer (1), ergostetrine gives the usual color reactions of ergot alkaloids. The well-known Van Urk color reaction as modified by the quantitative method of Smith appears to be the more sensitive in comparing the various alkaloids of ergot. Consequently the quantitative data presented were obtained by using this reaction. The reagent consisted of 0.125% *p*-dimethyl-amino-benzaldehyde and 0.1% ferric chloride in 50% (by volume) sulphuric acid. Two cc. of a 1–10,000 solution of ergostetrine (base), mixed with 4.0 cc. of the reagent, produced a blue color approximately $2^1/_2$ times as intense as U. S. P. Standard Ergotoxine ethanesulphonate under identical treatment. When 2.0 cc. of ergostetrine (base) 1–20,000 was compared with 2.0 cc. of the standard ergotoxine ethanesulphonate 1–10,000, the color intensity as determined in the colorimeter was essentially identical. Thus, ergostetrine base produced a color reaction twice as intense as U. S. P. standard ergotoxine ethanesulphonate. Calculating both in terms of free base, the color produced by ergostetrine is approximately 1.68 times as intense as that produced by the ergotoxine represented in the U. S. P. standard salt of ergotoxine. The difference in solvent of crystallization would, of course, account

for some deviation from the above figures, the ergostetrine being crystallized from benzol as above described.

These color reactions, therefore, offer no possibility for assaying ergostetrine in ergot preparations without resorting to prior chemical separation of the alkaloids, except as explained in the earlier report (2), in which it was pointed out that simple extracts exhibiting satisfactory color values would necessarily contain all of the ergostetrine present in the parent drug plus variable amounts of the other alkaloids, because of the greater stability and solubility of ergostetrine in the usual menstrua (water or water with alcohol) in the presence of the other alkaloids.

ACTION OF ERGOSTETRINE ON THE COCKSCOMB.

As pointed out in an earlier report (1, 2), ergostetrine is intensely active in producing cyanosis of the combs of cockerels. Adhering to the U. S. P. procedure, perceptible cyanosis was produced in the combs of some cocks in doses as low as 0.05 mg. per Kg. Others were more resistant, but in approximately 50 trials, a dose of 0.1 mg. per Kg. always produced a definite cyanosis. Doses of 0.1 mg. per Kg. and upward also produced the characteristic general depression or narcotic symptoms of ergot in the cockerels. Using birds standardized with U. S. P. standard ergotoxine ethanesulphonate, the pure crystalline ergostetrine base was judged to be approximately 160% (±20%) as potent as the standard ergotoxine salt. In general, it was also noted that the cyanosis developed somewhat more quickly in the case of ergostetrine, and that the cyanosis was characterized by a deeper blue-black color in the combs than that produced by ergotoxine or ergotamine, in which blanching is often but not always observed. It is believed that the more prompt action of ergostetrine may result in the actual trapping of more blood in the combs, thus accounting for the more intense darkening, whereas the action of the other alkaloids being slower, forces much more of the blood out into the general circulation before finally trapping the remainder for subsequent exhausting of oxygen to produce cyanosis. In any case, the difference between ergostetrine and the other alkaloids is by no means well-defined, the observation being purely a general impression formed by experience with many tests.

Thus, the official Cockscomb method is not specific in measuring the more important ergostetrine activity in ergot preparations also containing the other alkaloids. The limitations of the method are the same as those mentioned for the colorimetric method.

ACTION ON THE ISOLATED RABBIT UTERUS.

The action of pure crystalline ergostetrine on the isolated rabbit uterus shows that the amorphous substance previously reported upon (2) still contained some ergotoxine. Studies with pure ergostetrine reveal that, in marked contrast to ergotoxine, ergotamine, sensibamine and ergoclavine, the rabbit uterus is stimulated into strong contractions by ergostetrine. A study of the illustrations in Figs. 1, 2 and 3 shows the stimulative response of the uterine strips to epinephrine and ergostetrine, that ergostetrine inhibits the epinephrine response to only a relatively slight degree, as compared with ergotoxine or ergotamine, and that ergotoxine inhibits or abolishes the stimulative activity of both epinephrine and ergostetrine. This indicates that ergostetrine mainly stimulates sympathetic endings in the rabbit

uterus, gradually giving way to only a slight depression, whereas ergotoxine, ergotamine, sensibamine and ergoclavine are indistinguishable in being mainly depressant to the same sympathetic endings.

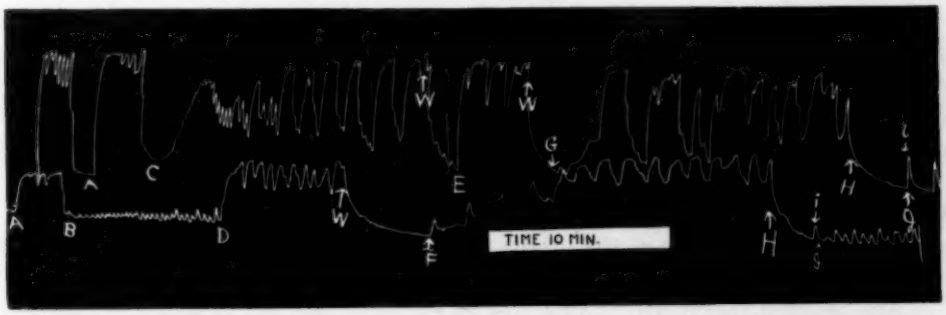

Fig. 1.—Isolated strips of rabbit uterus in 50-cc. tissue chambers. (Used third day after removal from rabbit.)

A—contraction from 0.05 mg. epinephrine.
B—slight stimulation from 0 2 mg. ergostetrine.
C—strong contractions from 0.4 mg. ergostetrine.
D—contraction from 0.05 mg. epinephrine showing no inhibition by the 0.2 mg. dose of ergostetrine.
E—contraction from 0.05 mg. epinephrine showing no inhibition by the 0.4 mg. dose of ergostetrine.
F & G—strong contraction from 0.4 mg. ergostetrine.
H & H—abolition of ergostetrine contractions by 0.05 mg. of ergotoxine.
I—failure of 0.4 mg. ergostetrine to cause typical contractions after the ergotoxine.
J—failure of 0.05 mg. epinephrine to cause typical contractions after the ergotoxine.
W—replacement of drugged Lock-Ringer solution with new solution.

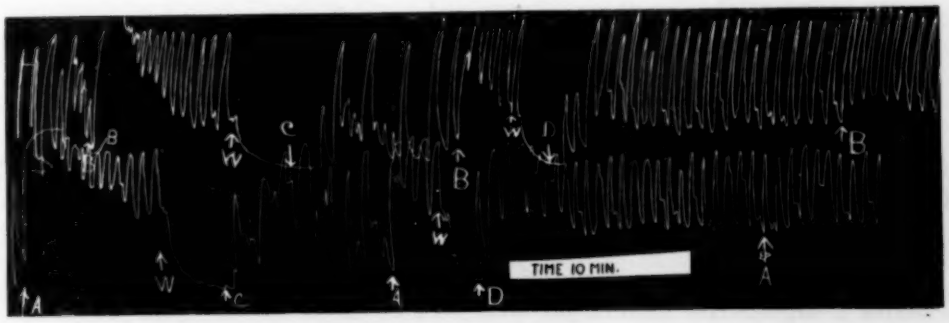

Fig. 2.—Isolated strips of rabbit uterus as in Fig. 1. (Used third day after removal from rabbit.

A—contraction from 0.05 mg. epinephrine (lower tracing).
B—contraction from 0.05 mg. epinephrine (upper tracing).
C—contractions from 0.4 mg. ergostetrine.
D—contractions from 1.0 mg. ergostetrine. Note the definite inhibition of the final epinephrine response produced by these large doses of ergostetrine. Ergotoxine in less than one-tenth this dose of ergostetrine causes as great or greater inhibition of the epinephrine response.
W—wash.

Thus the well-known Broom-Clark method can measure the ergotoxine type of activity in ergot preparations, but the presence of even small amounts of ergotoxine in such preparations eliminates the possibility of the use of the isolated rabbit uterus to estimate ergostetrine unless complete chemical separation is first resorted to.

Considerable variation in sensitivity to ergostetrine was observed in different uteri, as was to be expected. A concentration of 1:3,000,000 caused contractions with an increase in tone with the most sensitive uterine strips, whereas 1:500,000 was necessary to produce definite stimulation in others. Uteri used immediately after removal from the rabbit were the most sensitive. The longer the uterus is kept in the refrigerator before use, the less sensitive become strips from that uterus. After the fourth day in the refrigerator, it has become customary in this laboratory to discard any remainder of the uterus, because ergostetrine in a concentration of 1:50,000 or higher is then often found to be necessary to evoke satisfactory response.

The isolated rabbit uterus provides an excellent method of assaying different

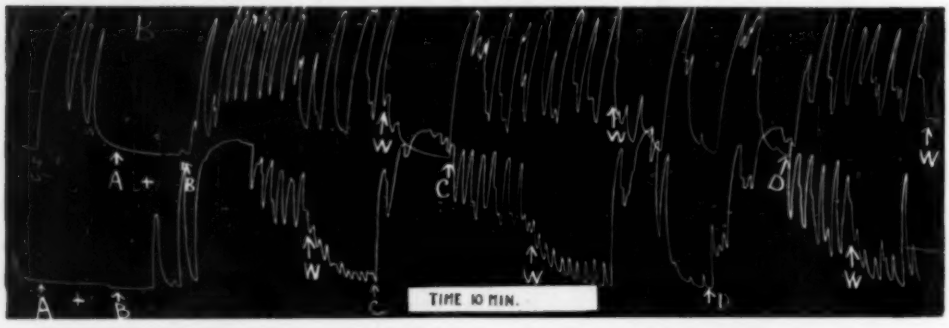

Fig. 3.—Similar strips of rabbit uterus as in Fig. 1 and 2. (Used third day after removal from rabbit.)

A—absence of response to 0.1 mg. ergostetrine.
B—strong contractions when additional 0.4 mg. ergostetrine added.
C—strong contractions from 0.5 mg. ergostetrine.
D—weaker stimulation from 0.4 mg. ergostetrine.
W—wash.

lots of ergostetrine in terms of a lot preserved *in vacuo* as the standard, since repeated doses produce satisfactorily constant responses in proportion to size of dosage.

ACTION ON ISOLATED GUINEA PIG UTERI.

Immature virgin guinea pig uteri (as used in Pituitary assays) are much more sensitive to ergostetrine than rabbit uteri (as used in the Broom-Clark procedure). Strong contractions are produced in all types of guinea pig uteri, and this tissue is, therefore, serviceable in assaying different lots of ergostetrine in terms of a lot preserved as a standard. The presence of histamine, tyramine, etc., and the other alkaloids in ergot preparations makes the method worthless for assay purposes, unless such crude preparations are subjected to chemical procedures for separating the various constituents.

ACTION ON CAROTID BLOOD PRESSURE OF ANESTHETIZED CATS AND DOGS.

Given orally, the blood pressure is not raised by ergostetrine. Intravenously, the substance usually produces a pressor effect, as described earlier (2), but relatively

enormous doses of crystalline ergostetrine failed to produce the well-known "vasomotor reversal" or reversal of the effect of epinephrine. The production of the "reversal" by the amorphous alkaloid reported earlier (2) shows that the amorphous product still contained appreciable amounts of ergotoxine. Perhaps acutely toxic doses of pure ergostetrine might inhibit the pressor effect of epinephrine to some extent (as observed with ergostetrine and epinephrine on the rabbit uterus) but doses of 2.0 mg. per Kg. to dogs or cats failed to demonstrate the "epinephrine-reversal" or indeed a definite inhibition of epinephrine response. The pressor effects were feeble when compared with ergotoxine or ergotamine, and a depressor effect was occasionally observed. Chloretone was used as the anesthetic.

ACTION ON PREGNANT CATS.

This was described in the earlier report (2), the chief characteristic being that ergostetrine acts much more promptly and powerfully than ergotoxine, ergotamine, etc. The crystalline product was effective in smaller doses than the amorphous product. This method has little quantitative value.

ACTION ON PUERPERAL HUMANS.

This was described elsewhere by Koff (13) for the amorphous product. Studies on the clinical effect of crystalline ergostetrine are described elsewhere by Tuck (14) and others (3, 15). The clinical results now available have caused the obstetricians involved to refer to the new alkaloid as "the true active principle" of ergot. It appears to account for the greater part of the traditional oxytocic activity of whole ergot, being far more effective than any constituent of ergot hitherto investigated. The ergotocin of Kharasch and Legault and the ergometrine of Dudley and Moir are apparently indistinguishable from ergostetrine in clinical effectiveness (3, 13, 14, 15, etc.), supporting the view that all three are identical.

The sensibamine used in these studies was obtained in the form of "Ergone," distributed by Parke, Davis & Co. The ergoclavine was kindly supplied by Dr. Joseph Rosin, Merck & Co.

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A STUDY OF THE ANESTHETIC PROPERTIES OF TRICHLORETHYLENE.*,[1]

BY JOHN C. KRANTZ, JR., C. JELLEFF CARR AND RUTH MUSSER.

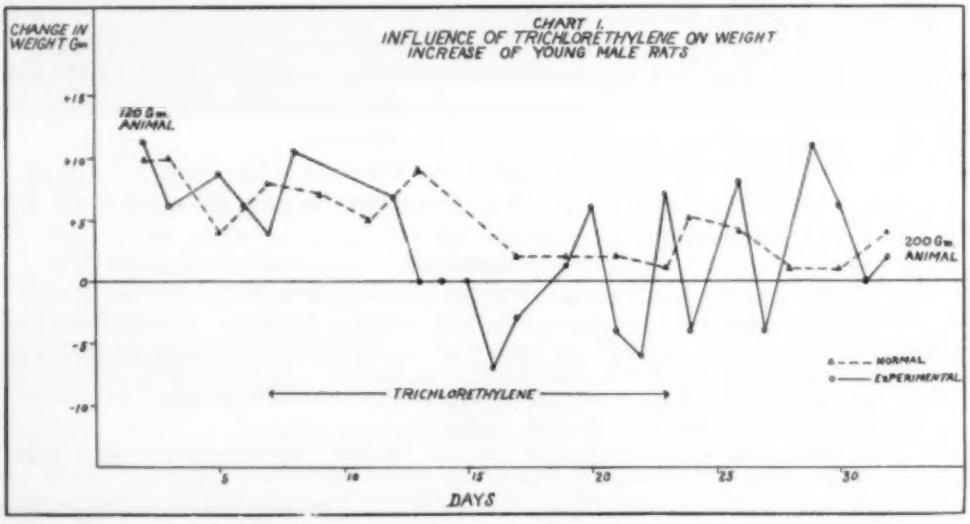
INTRODUCTION.

Since the work of Plessner (1) trichlorethylene has had a rather extensive use in the treatment of trigeminal neuralgia. The pharmacology of trichlorethylene was studied extensively along with other chlorinated ethylene compounds by Joachimaglu (2). Owing to the fact that this compound was used by Love (3) in the treatment of angina pectoris, its action on the coronary vessels (4) and on the perfused leg vessels of the frog (5) was studied by the authors. During these investigations, the anesthetic properties of the drug were investigated and are reported in this communication.

EXPERIMENTAL.

Material Employed.—The trichlorethylene used in these experiments was supplied through the courtesy of David A. Bryce of the Calco Chemical Co. and met the requirements set forth by Tschentke (6).

Inhalation Anesthesia in the Albino Rat.—Rats weighing 120–175 Gm. were placed under a bell jar and 1 cc. of trichlorethylene was permitted to volatilize



in the atmosphere of the jar. Within 4 to 5 minutes, the rats were usually under surgical anesthesia. The animals were then removed from the jar and allowed to recover. The recovery was prompt, generally occurring within 10 minutes. The treatment was repeated six times weekly over a period of five weeks. A summary of the effect of this treatment on 4 rats along with a control growth curve is shown in Chart 1.

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* Scientific Section, A. PH. A., Portland meeting, 1935.

[1] From the Department of Pharmacology, School of Medicine, University of Maryland.

Four additional experiments were conducted with mature male rats weighing between 200 and 250 Gm. In these experiments, the animals did not suffer a loss in weight after 19 consecutive daily anesthesias.

On the twentieth day, the four larger rats were killed by decapitation and the parenchymatous viscera were examined by C. G. Warner of the Department of Pathology. In gross, the appearance of the rats was normal. There were some histological changes in the kidneys that were fairly constant in the exposed animals and practically absent in the controls. These were congestion and dilatation of the glomerular tufts with occasional hemorrhage in the proximal tubules. Granular changes in the cytoplasm of liver cells were inconstant and not conclusive. The lungs of the exposed animals showed some emphysema and intraalveolar hemorrhage.

Rectal Anesthesia in the Rabbit.—Trichlorethylene was dissolved in various concentrations in mixtures of ethyl alcohol, glycerin and castor oil. These solutions were administered to rabbits (24 animals) by high rectal injections in amounts to provide 3.7 cc. of the drug per kilo. By this avenue of entrance, the trichlorethylene was ineffective in producing anesthesia. The drug was exceedingly irritating to the colonic mucosa.

Influence of Inhalation Anesthesia on Blood Sugar Level.—Rabbits weighing about 2 kilos were anesthetized according to the technique set forth in the anesthesia experiments using 5 cc. of trichlorethylene. Prior to anesthetizing, the animals were fasted for 24 hours. Their fasting blood sugars were determined by the Folin method (7) and also determined subsequently as shown in Table I.

TABLE I.—INFLUENCE OF TRICHLORETHYLENE ANESTHESIA ON BLOOD SUGAR OF RABBITS.

Rabbit. No.	Mg. per 100 Cc. of Blood. Fasting.	Deep Anesthesia.	Recovery (20 Minutes).
1	107	126	118
2	105	112	125
3	91	116	118
4	104	93	119
5	111	121	137
6	91	131	121

TABLE II.—SHOWS RISE AND FALL OF BLOOD PRESSURE AND CHANGES IN RESPIRATION FOLLOWING STIMULATION OF THE SCIATIC NERVE BEFORE AND AFTER LOCAL APPLICATION OF TRICHLORETHYLENE TO THE SCIATIC NERVE. TWO EXPERIMENTS, SEPTEMBER 13 AND 15, 1934.

		Blood Pressure Measured by a Mercury Manometer.				Respirations per Minute.		
No.	Stimulation of the Sciatic Nerve.	Before mm.	After mm.	Fall mm.	Rise mm.	Before No.	After No.	Change No.
		Dog 1.						
1	Normal, before trichlorethylene	160	170		10	18	20	+ 2
2	Trichlorethylene peripherally	160	172		12	20	10	− 10
3	Trichlorethylene centrally	164	170		6	10	20	+ 10
4	Trichlorethylene, peripherally	164	170		6	18	22	+ 4
5	Trichlorethylene, centrally	164	172		8	18	22	+ 4
6	Trichlorethylene by tracheal inhalation	164	140	24		30	160	+130
7	Trichlorethylene by tracheal inhalation	164	152	12		90	70	− 20
		Dog 2.						
1	Normal, before trichlorethylene	130	136		6	15	20	+ 5
2	Trichlorethylene peripherally	130	136		6	15	20	+ 5
3	Trichlorethylene centrally	130	136		6	15	19	+ 4

Trichlorethylene on Nerve Conductivity.—To determine the capacity of trichlorethylene to block nerve conductivity, an area of the sciatic nerve of a dog anesthetized with ether was exposed and subjected to faradization and the respiratory and blood-pressure responses were noted. A sling of trichlorethylene was placed around the nerve for several minutes and the nerve stimulated peripheral to the sling. These experiments are also shown in Table II.

SUMMARY.

Trichlorethylene may be used by inhalation to produce anesthesia in the rat. The anesthesia in the rat and rabbit is accompanied by marked stimulation of the skeletal musculature. Repeated anesthetizing did not markedly influence the growth or important viscera of the rat. The compound was incapable of producing anesthesia when administered rectally. During inhalation anesthesia in the rabbit, a mild hyperglycemia results. Trichlorethylene applied to the sciatic nerve, was incapable of blocking the blood pressure and respiratory responses of faradization.

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A SIMPLIFIED ASSAY FOR THE OFFICIAL IODINE-IODIDE SOLUTIONS.*[1]

BY WILLIAM F. REINDOLLAR.[2]

Solutions of iodine, containing potassium iodide, have been employed as therapeutic agents since the recognition of the germicidal properties of the former substance. Two of the most important of these products are the tincture and the compound solution of iodine. The former is an alcoholic liquid containing 7 Gm. of iodine and 5 Gm. of potassium iodide in 100 cc.; the latter is an aqueous fluid having 5 Gm. and 10 Gm., respectively, of iodine and potassium iodide in each 100 cc. These two galenicals have enjoyed recognition in the last five Pharmacopœias, and have both been accepted by the Committee on Scope of the forthcoming Standard. Furthermore an Antiseptic Solution of Iodine (1), having a concentration of 2.0 Gm. of iodine and 2.4 Gm. of potassium iodide, respectively, in 100 cc. is being considered for admission.

The U. S. P. provides assays for the iodine and potassium iodide content of both of these agents. The respective assays are similar in each case and are herein briefly described:

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* Scientific Section, A. PH. A., Portland meeting, 1935.

[1] Contribution of Bureau of Chemistry, State of Maryland Department of Health.

[2] The author wishes to express his appreciation to Dr. William M. Thornton, Professor of Analytical Chemistry of the Johns Hopkins University, for helpful suggestions offered during the course of this work.

Potassium Iodide—A measured quantity of the solution is evaporated to dryness on a water-bath, small successive portions of distilled water are added from time to time until the iodine has been completely volatilized, the dried residue is weighed and qualitative tests for the potassium and iodide ions are made.

Iodine is determined volumetrically upon a measured aliquot by titration with 0.1*N* sodium thiosulphate solution.

These assays embody several undesirable features:

(*a*) The determinations require two 5-cc. portions. Tincture of Iodine is marketed to-day largely in small individual bottles which frequently contain less than 10 cc. This condition requires the purchase and mixing of two samples.

(*b*) The assay for potassium iodide is in fact a total solids determination. Provided that sufficient potassium iodide be added to respond to the qualitative tests, a much cheaper salt might be substituted for the balance, and escape detection.

(*c*) The determination of potassium iodide, particularly in the case of the compound solution is time consuming, four hours are required for some samples.

(*d*) Sodium thiosulphate solution, unless carefully prepared and preserved will deteriorate and require frequent standardization.

The recognition of these defects has lead to the proposals of numerous other procedures for the determination of one or both of the ingredients. Among those suggested have been the determination of iodine colorimetrically (2) and by converting to iodide with zinc and precipitating with silver nitrate (3); the determination of potassium iodide argentimetrically (4), or by difference after determining free and total iodine (6, 7). Other assays (8, 9, 10) employ modifications of the iodine cyanide method of Rudolf Lang (11). The following procedure, devised in this laboratory is believed to be simpler than any of the foregoing and to be free from the objections raised against the official methods:

Five cc. of the solution is measured into an iodine flask and the free halogen is titrated with 0.1*N* alkaline potassium arsenite solution using starch indicator. Fifty cc. of concentrated hydrochloric acid and 5 cc. of chloroform are then added, the mixture is well cooled and then titrated with *M*/20 potassium iodate solution until the chloroform layer is colorless. The iodine may be calculated from the number of cc. of 0.1*N* potassium arsenite required; the potassium iodide from the difference, in cc., between the amounts of potassium iodate and potassium arsenite solutions used. The reactions may be represented by the following equations:

$$As_2O_3 + 2I_2 + 5H_2O \longrightarrow 2H_3AsO_4 + 4HI$$
$$KIO_3 + 2KI + 6HCl \longrightarrow 3KCl + 3ICl + 3H_2O$$

EXPERIMENTAL.

The volumetric reagents were prepared from C.P. chemicals. The arsenite and thiosulphate solutions were standardized with Baker's reagent iodine, the iodate solution with Bureau of Standards arsenic trioxide. The 0.1*N* potassium arsenite solution was made to contain a definite excess of potassium bicarbonate as recommended by Gooch (12) to neutralize the hydriodic acid formed.

A comparative study of this and the U. S. P. assays was made upon three galenicals, Tincture of Iodine U. S. P. X, Antiseptic Solution of Iodine, U. S. P. XI (proposed), and Compound Solution of Iodine U. S. P. X. The first and last were obtained by mixing the residues of a number of previously assayed samples, known to approximate the proper concentrations, the second was carefully prepared from U. S. P. chemicals. The results of this investigation are tabulated:

Sample.	Iodine. U. S. P.	Iodine. Volumetric.	Potassium Iodide. U. S. P.	Potassium Iodide. Volumetric.
Tincture of Iodine X	7.42	7.42	5.38	5.48
	7.42	7.45	5.36	5.44
	7.43	7.44	5.42	5.36
	7.43	7.43	5.42	5.38
Tincture Iodine XI	1.98	2.00	2.40	2.42
	2.00	2.00	2.42	2.45
	1.99	2.00	2.43	2.42
	2.00	2.00	2.44	2.43
Lugol's Solution	4.70	4.70	10.16	10.15
	4.67	4.72	10.12	10.10
	4.70	4.69	10.14	10.12
	4.70	4.68	10.18	10.11

DISCUSSION.

Owing to the high concentration of potassium iodide in Lugol's Solution the amount taken for assay was 4 cc., in addition the volume of concentrated hydrochloric acid was increased to 75 cc. for this product and for the U. S. P. X tincture. Slight modifications of the quantity taken for assay, in order to maintain proper concentrations will make this method applicable to Churchill's Tincture of Iodine or any similar preparation. The results of this assay compare favorably with those obtained by the U. S. P. method and the following advantages are claimed for it: (*a*) It permits the estimation of the two constituents upon one portion, thus conserving the sample, (*b*) it employs, for the estimation of iodine, a solution that is not only quite stable, but one that may be prepared directly from arsenic trioxide—a primary standard, (*c*) it substitutes a volumetric for a gravimetric estimation in the potassium iodide determination, hence is less time consuming, (*d*) in the latter portion of the assay it employs a reagent that is specific for the iodide ion.

SUMMARY.

A new assay has been devised for Iodine-Iodide Solutions.

The results obtained by this method are in good agreement with those secured by the United States Pharmacopœia.

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THE PHARMACOPŒIA OF THE UNITED STATES AND THE FEDERAL FOOD AND DRUGS ACT.*

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The primary purpose of a pharmacopœia is to present a list of approved medicinal agents which have been standardized as to identity, purity and strength, so that the same title shall always apply to a substance of the same properties and potency. Even a layman can understand the danger to human life if the title "Tincture of Aconite" referred to a preparation of one strength in Portland, Oregon, and to one of a different strength in Portland, Maine.

In all of medicine and pharmacy there is probably no matter of greater importance than the principle that drug preparations dispensed under the same title shall always possess the same essential properties and be of the same potency. Accordingly in every country having a national pharmacopœia it is the custom to consider that the official title of a drug, unqualified by other words, always refers to a drug having the identity, strength, quality and purity prescribed in the pharmacopœia of that country. If this were not true the primary purpose of a national pharmacopœia would be defeated.

Practically every civilized nation has an official pharmacopœia governing the character and strength of the medicinal agents dispensed on physicians' prescriptions within its own territorial limits. In countries other than the United States the committees which revise their several pharmacopœias are appointed by some political department of their respective governments, whereas the Committee of Revision of the Pharmacopœia of the United States is elected by a convention of physicians and pharmacists, and of other professional and scientific men who are in some way concerned with the production or use of drugs and medicines.

ORIGIN AND METHOD OF REVISION OF THE PHARMACOPŒIA OF THE UNITED STATES.

The Pharmacopœia of the United States belongs to and is under the absolute and complete control of the United States Pharmacopœial Convention, a society which has had a continuous existence of one hundred and fifteen years, in which period it has issued ten revisions of the Pharmacopœia, the Eleventh Decennial Revision being now in process of printing.

The United States Pharmacopœial Convention originated as a voluntary national association of physicians in 1820, and continued as a voluntary association, first of physicians only, and later of physicians and pharmacists, for eighty years. In 1900 the Convention was incorporated under the laws of the District of Columbia, and its membership now includes not only physicians and pharmacists, but also representatives of numerous scientific institutions and societies, and societies of law enforcement officials.

At the last assembly of the Convention in Washington in 1930 its membership included delegates from the American Medical Association, the AMERICAN PHARMACEUTICAL ASSOCIATION, the American Chemical Society, and from four other national societies relating to medicine, pharmacy or chemistry; from four national societies of officials who are charged with the duty of enforcing either

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national or state food and drug laws; from six departments or divisions of the U. S. Government which are concerned with medicine or with the enforcement of Federal drug laws; from forty-five medical colleges and university medical departments; from fifty-five colleges of pharmacy and university departments of pharmacy, and from twelve other colleges and universities. In addition to delegates from colleges and universities there were representatives from sixteen state medical societies; from thirty-six state pharmaceutical societies, and from eighteen other institutions and societies having to do with the medical sciences.

Of the more than four hundred delegates present at the 1930 meeting of the U. S. P. Convention, only nine represented societies directly connected with trade or industry, so that the influence of commercial interests in the making of the Pharmacopœia may be regarded as practically nil.

This Convention of Delegates has absolute control of the affairs of the Pharmacopœia in every particular. It elects and instructs the Board of Trustees and the General Committee of Revision, and every act of these two bodies is subject to revision or disallowance by the next assembly of the Convention.

The General Revision Committee of fifty members in turn elects a smaller Executive Committee which directly handles the revision work, all decisions of the latter being subject to approval by the General Committee.

The members of the Board of Trustees, which handles the financial and business affairs of the Pharmacopœia between assemblies of the Convention, receive only their actual traveling and clerical expenses incurred in the service of their office. Any profit from sales of the Pharmacopœia must be devoted to research work upon pharmacopœial subjects, and cannot be diverted to any other purpose.

Thus while the U. S. P. might be technically defined as private property, its purpose and its services are of a most decided public character.

The standing of the U. S. P. among pharmacopœias of the world is indicated by the fact that it has been translated into the Chinese language and is used as the official standard of the Republic of China. The Spanish translation has been adopted as the official pharmacopœia of the governments of the Philippine Islands and of the Island of Porto Rico, and is officially recognized by the independent Republics of Cuba and Costa Rica. The Spanish edition also has a wide distribution throughout the other Spanish-speaking nations of the Western Hemisphere.

SHOULD THE PHARMACOPŒIA BE DELETED FROM THE FEDERAL FOOD AND DRUGS ACT?

Some of those who have been confused by the alleged private property status of the United States Pharmacopœia, and also by the controversy over the inclusion or non-inclusion of a so-called variation clause, have somewhat hastily reached the conclusion that the Pharmacopœia should be deleted entirely from the Federal Food and Drugs Act, which would lead to the rather strange result that only official drugs and medicines would then be exempt from the requirements of the Federal law. Under such a situation all other drugs and medicines, including patent medicines, would be required to conform to certain standards of purity, quality and strength, and to be truthfully labeled and advertised, while official drugs and medicines could be adulterated, to any extent, and still be admissible to interstate commerce without let or hinderance from either Federal or other authority.

Legally the crime of adulteration exists when the qualities of a substance differ from those of a recognized standard. If there is no recognized standard then there is no ground upon which a charge of adulteration can be legally sustained.

Surely those who have advocated that reference to the Pharmacopœia be omitted from the Federal Act have not fully considered all the consequences of such deletion.

SHOULD REFERENCE TO THE U. S. P. IN THE FEDERAL FOOD AND DRUGS ACT BE COUPLED WITH A VARIATION CLAUSE?

Another conclusion stoutly defended by some students of the subject is that the U. S. P. (along with the other named authorities) should be included in the Federal Food and Drugs Act, but should not be coupled with a variation clause.

(By a "variation clause" we understand any clause or provision in the law which permits variation from the otherwise prescribed standards upon condition that the products are so labeled as to prevent their confusion with those which profess to comply with such standards.)

Those who contend that no variation from pharmacopœial standards should be permitted under any circumstances exclaim, with apparent logic, "What is the use of having a legal standard, if compliance with it is purely voluntary, and if manufacturers and dealers may follow some other standard by merely stating that fact upon the label?"

The writer agrees with the thought implied in this question in so far as it applies to drugs dispensed upon physicians' prescriptions or which are sold under their official titles for medicinal purposes, but as will be seen on further study, there are numerous cases where the practical necessities of interstate commerce, as well as other considerations, require that departure from official standards be permitted under certain circumstances, provided no deception is attempted or accomplished, and provided also that the facts are truly and clearly stated upon the label.

In the first place it should be remembered that a Federal Food and Drugs Act is based upon the constitutional powers of Congress to regulate interstate commerce and, therefore, applies exclusively to foods and drugs while they are the subjects of interstate commerce. Before they enter into or after they have left the domain of interstate traffic, the regulation of their further distribution rests solely with the police powers of the states in which they are located. Except in places under exclusive Federal jurisdiction, as the District of Columbia, any Federal law regulating the distribution of untaxed drugs, on prescription or otherwise, after they have left the domain of interstate commerce, would be null and void, and of no more legal effect than the utterance of any private citizen.

The first part of the definition for drugs as it appears in the Copeland Bill[1] [S. 5, Sect. 201, paragraph (*b*)] reads as follows: "(*1*) *All substances and preparations recognized in the United States Pharmacopœia, Homeopathic Pharmacopœia of the United States, or National Formulary, or any supplement to any of them.*" It will be noted that this definition does not apply merely to substances and preparations intended for medicinal use, but to every substance and preparation bearing a name

[1] The following discussion is based upon the Copeland Bill, which with or without further modification will probably soon supersede the Act of June 30, 1906.

mentioned in any one of the three stated official compendiums, or in any supplement thereto, whether intended for medicinal or other purposes.

Again one of the definitions of an adulterated drug, Sect. 401, paragraph (*b*), provides that a drug shall be deemed to be adulterated "*If its name is recognized in an official compendium*[1] [*i. e.*, U. S. Pharmacopœia, Homeopathic Pharmacopœia or National Formulary], *or if it purports to be a drug the name of which is so recognized and it differs from the standard of strength, quality or purity as determined by the tests or methods of assay set down therein,*" *etc.*

And finally, under the provisions for misbranding [Sect. 402, paragraph (*h*)] it is declared that a drug shall be deemed to be misbranded, "*if its name is recognized in an official compendium, or if it purports to be a drug the name of which is so recognized and it is not packaged and labeled as prescribed therein, unless exempted under (1) of this Section.*"

From these definitions it seems clear that unless a variation clause be included in the Federal Act it will be unlawful to ship in interstate commerce any drug named in the U. S. P. unless it fully complies with standards of strength, quality and purity, and the methods of labeling and packaging prescribed therein.

It is true that a prefatory notice in the U. S. P. specifically states that its standards "*are intended to apply solely to substances which are used for medicinal purposes and when professedly bought, sold or dispensed as such,*" but this limitation is nullified by the language of the Bill, which makes "all substances and preparations recognized in the U. S. P." subject to the requirements of the Act.

Now it happens that one hundred and forty or more of the substances named in the Monographs and List of Reagents of U. S. P. X are the names of agents, many of them belonging to the class commonly known as heavy chemicals, which are more largely employed in the arts and industries than for medicinal purposes.

Among such chemicals we readily call to mind hydrochloric, nitric, sulphuric, acetic and phosphoric acids, the salts of iron, copper, zinc and manganese, the fixed alkali hydroxides, many salts of the alkalies and alkaline earths and numerous other agents, the uses of which in the arts and industries far exceed their employment for medicinal purposes. While a few hundreds or a few thousands of pounds of some of these agents would satisfy the strictly medicinal requirements of the United States, their employment in dye and paint manufacture, in metallurgy, in the manufacture of soaps, paper, fertilizers, textiles, leather, insecticides, fungicides and in the production of numerous other largely used commodities amounts to many thousands or even hundreds of thousands of tons in a single year. To require that these vast quantities of chemical should always meet the high standards of quality, strength and purity prescribed for them when employed medicinally would be prohibitive of their commercial and industrial uses. To make the U. S. P. the standard for drugs in the arts and industries would be to thrust upon it a duty which it is entirely unfitted to discharge, and which it expressly disclaims in its prefatory notes.

Putting aside the opinions of lawyers and appealing to our own common sense, is it conceivable that the United States Congress would knowingly adopt or

[1] By definition, Sect. 201, paragraph (*m*), "official compendium" is understood to refer to any one of the three: United States Pharmacopœia, Homeopathic Pharmacopœia or National Formulary.

that the Federal Courts would sustain the validity of such a rigid and unreasonable requirement?

From these considerations it seems clear that the necessities of commerce practically compel the insertion of a provision in the law which will permit the interstate transportation of drugs of other than pharmacopœial quality when labeled so as to indicate their true character.

VARIATION CLAUSE NECESSARY TO PERMIT IMPROVEMENT IN PHARMACEUTICAL SUBSTANCES.

Another reason for the presence of a variation clause is that it is necessary in order to permit improvement in official drugs and preparations in the interim between decennial revisions of the U. S. P. and between the issuance of supplements thereto.

That the qualities prescribed for U. S. P. drugs and preparations are not beyond improvement is shown by the fact that the specifications for many of them are altered with each succeeding revision of that volume—changes in the percentage of active constituents, in solvents and menstrua, in solubility, melting and boiling points and other physical constants, in the purity rubric, in methods of packaging, etc., etc. The necessities for these changes are not discovered all at once on the eve of a new issue of the Pharmacopœia, but come to light from time to time during the entire decade within which a given issue is in effect.

Unless the law provides some proper form of variation clause no improved product could be transported in interstate commerce until a new issue of the Pharmacopœia, or of a supplement, recognized such change. The improvement might be of the highest importance to human health and life, yet the producer could not ship his product across state lines by mail, express or freight, or carry it in person—even with the most elaborate precautions of labeling to show that the preparation did not purport to comply with Pharmacopœial standards, and specifically designating the particulars in which it differed therefrom.

His only recourse would be to market it as a proprietary specialty, under a coined name, which he would be perfectly free to do, and thus the absence of a proper variation clause would act as a direct encouragement to the further multiplication of a variety of preparations of which we already have too great a surplus.

VARIATION CLAUSE IN RELATION TO THE DELEGATION OF LEGISLATIVE POWER.

The presence of a variation clause in the Food and Drugs Act is also closely tied up with the judicial doctrine that legislative bodies cannot delegate to others the legislative powers vested in them by a written constitution.

The United States Constitution (Article I, Sect. 1) recites that "*All legislative powers herein granted shall be vested in a Congress of the United States, which shall consist of a Senate and House of Representatives.*"

By an unbroken line of judicial decisions it has been settled that the intent and effect of this Article is to prevent the Congress from transferring any of its law-making powers to any other body, public or private, or to any administrative officer or other individual. Recent decisions in the code cases have re-affirmed and emphasized this interpretation of the Constitution, and have declared that the Congress cannot confer even upon the President of the United States the power to

designate and define acts which shall be regarded as criminal, and for which citizens may be punished by fine or other penalties.

The inclusion in the Food and Drugs Act of an issue of the U. S. P. in existence at the time the law is enacted would be distinctly an Act of the Congress itself, as much so as if the language of the U. S. P. had been copied in the Bill, and could not, therefore, be regarded as a delegation of legislative power, but how about later editions of the book, creating new standards, and coming into effect after the law has been placed on the statute books?

By the terms of the Act [Sect. 201, paragraph (*m*)], the particular issue of the Pharmacopœia which shall apply in determining the charge of adulteration or misbranding is the one which shall be "*official at the time any drug * * * * * *is introduced into interstate commerce.*"

It may happen, therefore, that a drug which fully complied with the Pharmacopœia official at the time the law was enacted will not comply with the standards of a later edition of that volume. Would the shipment of such a drug be punishable as a crime under the Food and Drugs Act? If so, it would not be a crime created by the direct act of Congress, but by the action of the U. S. P. Revision Committee in changing the standards after the enactment of the law.

This was the particular question considered in "The State of Ohio *vs.* Emery," reported in 54 Ohio State Report, page 365, which may be regarded as the leading case on this subject.

The Ohio statute, enacted in 1890, while the 1880 Revision of the U. S. P. was still in effect, declared a drug to be adulterated "(1) *If sold under or by a name recognized in the United States Pharmacopœia it differs from the standard of strength, quality or purity laid down therein.*" The statute did not contain a clause permitting variations from the standards of the Pharmacopœia if properly labeled so as to show such variation.

Subsequent to the enactment of the statute the 1890 Revision of the Pharmacopœia became official, and by a regulation of the Ohio Food and Dairy Commissioner was adopted as the standard of his Department, and in Oct. 1895 the defendant Emery was arrested for the sale of adulterated cochineal.

On trial of the case it appeared that the cochineal did conform to the standards of the 1880 Pharmacopœia—the issue official at the time the law was enacted—but did not conform to the standards of the 1890 Revision.

Attorneys for the State contended that under his authority to make rules and regulations for the administration of the Act the State Food and Dairy Commissioner had authority to substitute the standards of the new Pharmacopœia in place of the standards of the 1880 Revision.

Counsel for the defendant contended that the legislature could not adopt as part of the penal laws of the State the contents of a book not then in existence, and that it could not confer upon the Food and Dairy Commissioner authority to designate a different standard than that adopted by the legislature, since to do so would be an unconstitutional delegation of the law-making power.

The Supreme Court of the State of Ohio sustained the contention of the defendant's counsel in the following language:

"The reference in the statute to the United States Pharmacopœia, could be to no other than the edition of the book in use and recognized when the statute was enacted and went into ef-

fect, which was the edition known as that of 1880. It is not to be supposed that the legislature intended to adopt, by reference, as part of the penal laws of the State, an edition of the book not then in existence, and of the contents of which the legislature could have no knowledge. The drug, with the sale of which the accused was charged, was recognized in the edition of 1880, by the name under which it was sold, and a standard of strength, quality and purity therein laid down. It is not claimed the drug sold was below that standard; and the sale could not be rendered unlawful because it is below a higher standard laid down in a subsequently revised edition of the book, though that edition was in use at the time of the sale. To hold that the sale could thus be made unlawful, would be equivalent to holding that the revisers of the book could create and define the offense, a power which belongs to the legislative body, and cannot be delegated."

It will be noted that this decision sustains the power of the legislature to adopt an existing Pharmacopœia as part of the law, but denies its power to authorize the substitution of a later issue for the one in force when the law was adopted.

Although rendered in the construction of a state enactment, the rule laid down in the Emery case has been generally regarded as equally applicable to Federal laws, and this decision was really responsible for the insertion of the variation clause in the Federal Food and Drugs Act of June 30, 1906.

The theory upon which it is argued that the insertion of a variation clause will save the statute from the charge of being an unconstitutional delegation of power is that it will permit the manufacturer to freely select the standard which he chooses to follow, provided his labels indicate the facts truthfully and clearly. In plain English it gives the manufacturer the option either of following the standards of the U. S. P. or other standards as he may prefer, provided that if he elects to follow some other standard the label shall plainly indicate the fact. Thus the manufacturer's liability and obligations always remain the same no matter how frequently the standards of the Pharmacopœia are altered.

If the manufacturer is always free to choose the standards with which his preparations shall comply, then no change in the Pharmacopœia can affect his property rights or legal obligations, and consequently there is no exercise of law-making power when the Revision Committee changes the standards of the Pharmacopœia.

TITLES USED IN U. S. P. TAKEN FROM COMMON LANGUAGE.

Another thought to be taken into consideration is that the titles employed to designate U. S. P. chemicals and preparations are, in a majority of cases, taken directly from the English language, and do not represent any invention or discovery on the part of the revisers of that volume.

If one were to seek a copyright upon such titles as Tincture of Aconite or Hydrochloric Acid the application would be refused upon the ground that these are common words of the English language, the use of which is free to all, and that they may not be monopolized so as to represent exclusively the product of a single individual. If these titles cannot be monopolized to distinguish the products of a particular manufacturer, upon what ground can it be argued that their incorporation in the U. S. P. confers upon them such special qualities that they can no longer be used in their ordinary English sense, especially when coupled with other qualifying words which plainly indicate that the products to which they are attached do not profess to comply with U. S. P. requirements.

To hold that when common nouns and adjectives are once incorporated in the U. S. P. they can—in the absence of deception—no longer be employed in their

original and ordinary senses, would be to establish a rule of law never before recognized in this or any other country.

PRIMARY PURPOSE OF FOOD AND DRUGS ACT TO PREVENT FRAUD AND DECEPTION.

The primary and fundamental purpose of a food and drugs act is not to compel the use of certain products in preference to others, but to prevent fraud and deception in the sale of such substances—to prevent the sale of adulterated or harmful foods as pure and wholesome, or the delivery of adulterated or sophisticated drugs in place of those which are pure and genuine, or as in the case of cosmetics or package medicines, to insure that they shall not contain harmful or dangerous ingredients. It seeks to accomplish these results by requiring that labels and advertising shall state necessary and material facts, and shall not bear false and misleading statements, that inferiority shall not be concealed by the use of color or other artifice, or that the form of package shall not be such as to mislead the purchaser as to the quantity of its contents. In short, it aims to provide the means whereby the purchaser, from an inspection of the package, the label or the advertising, can determine whether the product possesses the qualities he seeks, and to insure that he shall receive what he expects and pays for. If the package, the label and the advertising clearly and truthfully set forth the character of the product, the primary purpose of the law is accomplished.

SUMMARY.

In the preceding pages it has been sought to justify the following conclusions:

1. That a Federal Food and Drugs Act as represented by the Copeland Bill, applies exclusively to foods and drugs while they are within the domain of interstate commerce. By the use of no language can the Federal law be made to apply to commerce after it has lost its interstate character. After once mingling with the goods of a particular state, only the laws of such state can fix the qualities which drugs must possess in order to permit their lawful distribution therein.

2. That the definitions for drugs, and for adulterated and misbranded drugs as found in the Copeland Bill are such that without the addition of a proper variation clause, only such drugs as complied with U. S. P. standards of strength, quality and purity could be lawfully transported in interstate commerce, a condition which if it prevailed would prevent the shipment of hundreds of thousands of tons of drugs and chemicals commonly used in the arts and industries.

3. That each new revision of the U. S. P. presents numerous changes in the standards of strength, quality and purity of the drugs described in its monographs, and also introduces new drugs and preparations which were not commonly used or even known when the preceding volume was issued. If the law-making body confers upon the revisers of the Pharmacopœia blanket authority to change the legal obligations of the citizen so as to render him liable to fine and imprisonment for acts which would have been innocent in law if the Pharmacopœia had not been revised, it would seem fairly evident that there has been an attempted delegation of law-making power.

On the other hand, if the law permits the use of U. S. P. titles which are parts of common English speech, upon articles not of U. S. P. standards, upon condition merely that the label states the fact of such variation, then no new obligation is

forced upon the producer when a new Pharmacopœia becomes official. Under any revision of the Pharmacopœia his legal liability remains the same; he will always have the option either of observing U. S. P. standards or of stating upon the labels wherein his product differs from such standards.

4. That it is the common understanding among physicians and pharmacists and taught in all colleges of pharmacy, that the use of a U. S. P. title without the addition of qualifying adjectives or other explanatory words, implies that the product to which it is attached complies with U. S. P. standards of strength, quality and purity. Unless this be the rule, the primary purpose of the Pharmacopœia—to enforce uniformity in properties and potency—would be defeated.

5. That a proper variation clause is one which would require that when a U. S. P. title is attached to a drug of other than U. S. P. standards the qualifying words shall indicate clearly that the drug does not profess to comply with such official standards. The wording of the label should not be obscure or ambiguous, but such as to enable the reader to form an intelligent opinion as to the character of the product.

6. And finally, that the deletion of the variation clause from the Federal Food and Drugs Act would not close interstate commerce to the shipment of medicinal preparations of official drugs which did not comply with U. S. P. standards. The producer would need only to give his product some attractive coined name and ship it as a proprietary specialty, thus setting his own standards, without let or hinderance from any authority.

A BRIEF HISTORY OF THE DRUG CODE.*

BY E. F. KELLY.

Following the enactment of the National Industrial Recovery Act, the National Association of Retail Druggists appointed a Committee on the Retail Drug Code.

Later, a meeting of representatives of the state pharmaceutical associations was held in St. Louis, Mo., at the invitation of Drug Center, at which a Committee was named to coöperate with the N. A. R. D. Committee in preparing a code for the retail drug trade.

These Committees met jointly in Washington, D. C., and drew up a code which was sponsored by the N. A. R. D. with the approval of the AMERICAN PHARMACEUTICAL ASSOCIATION. Representatives of the Drug Institute of America, Inc., also coöperated in writing the Code. It was estimated that at least 60% of the retail drug trade of the Country sponsored the code.

The original hearing on the Code of Fair Competition for the Retail Drug Trade was held in the auditorium of the Chamber of Commerce of the U. S. A., Washington, D. C., on August 25, 26 and 27, 1933, before A. D. Whiteside as Deputy Administrator, and Donald Richberg as Legal Advisor. It became evident at the first session of the hearing that the Code as submitted would have to be amended and the remainder of the sessions were devoted to an effort to bring about

* Section on Historical Pharmacy, Portland meeting, 1935.

an agreement between the views of the National Recovery Administration and the representatives of the trade. Finally, a compromise was reached and an amended code was substituted. This code was the subject of a number of private hearings and conferences, and was finally approved by President Roosevelt on October 21, 1933, as a part of the Code of Fair Competition for the Retail Trade with Schedule A applicable to the retail drug trade. A copy of the code with explanations is attached, and it will be noted that drug retailers were subject to the same provisions as the other retailers subject to the code except as amended or supplemented by Schedule A.

Schedule A provided for the administration of the Code as far as the drug trade was concerned, by the National Retail Drug Trade Council composed of two members representing the National Association of Retail Druggists, one member representing the AMERICAN PHARMACEUTICAL ASSOCIATION and one member representing the Drug Institute of America, Inc.—the members to be approved by the NRA.

The Council was approved on October 27, 1933, with the following temporary membership: John A. Goode and John W. Dargavel, representing the National Association of Retail Druggists; E. F. Kelly, representing the AMERICAN PHARMACEUTICAL ASSOCIATION, and Wheeler Sammons, representing the Drug Institute. In November 1933, George M. Gales was added as the representative of the National Association of Chain Stores with the Approval of NRA. Later, each of these gentlemen was elected to membership with the exception of E. F. Kelly, representing the A. PH. A. who served as a temporary representative, since a meeting of this ASSOCIATION was not held in the interval between the time when permanent representatives were requested and the closing of the code organization. At the organization meeting, J. A. Goode was elected *Chairman*, and E. F. Kelly, *Secretary-Treasurer*, of the Council and they served continuously as did each member, throughout the existence of the code. W. H. Johnson was elected *Assistant Secretary* in charge of the office and resigned on April 1, 1934, when he was succeeded by Paul Pearson. E. F. Kelly served as *Executive Secretary* from June 1934 to March 15, 1935, when he was succeeded by W. S. Elkins, Jr.

The name of the Council was changed to the National Retail Drug Code Authority in December 1933. The office was located in the Tower Building, 14th and K Sts., N. W., until May 1, 1934, after which date it was located in the National Press Building, 14th and F Sts., N. W., Washington, D. C.

The Code became effective on October 30, 1933, and, after organizing, the Council undertook the organization of local code authorities. It was recommended that these be set up in each congressional district, except in those cases where two or more congressional districts were included in a city, when the districts were to be combined and a metropolitan code authority composed of representatives of the districts included, was to be organized. The president of each state pharmaceutical association was requested to name three representative druggists in each congressional district to conduct the election of the local or metropolitan code authority. This procedure was unique and proved to be very successful since approximately 420 out of a possible 435 congressional districts were organized and in operation within a short time.

Raising the necessary funds also had prompt attention. A voluntary assess-

ment of one dollar per employee was levied for the year ending October 31, 1934, payable to the local or metropolitan code authority of which one dollar per store was to be remitted to the national code authority for its expenses. The remainder was intended for the expenses of the local or metropolitan code authority whose treasurer was bonded, under a budget approved by NRA and subject to audit. The single assessment plan was adopted whereby the retailer paid only to the code authority representing his principal line of business.

The budget submitted in October 1934, and approved in November 1934, covered the six-month period from November 1, 1934 to April 30, 1935, and called for a mandatory assessment of one dollar per employee payable to the local or metropolitan code authority of which fifty cents per store was to be remitted to the National code authority. This was a combined budget and covered $25,000.00 for the national code authority and $173,979.05 for the local and metropolitan code authorities.

The National Code Authority adopted a Constitution and By-Laws, which were approved by NRA.

During the life of the code, the following amendments to Schedule A were approved after public hearings:

Amendment No. 2 established a new Loss Limitation clause effective April 7, 1934, making it a violation to sell below the manufacturers' wholesale list price in dozens, provided that all discounts, free goods and allowances made available to all purchasers in dozens be taken into account. The proviso made it necessary for the national code authority to issue lists giving approved minimum prices which proved to be unworkable because of the large number of items affected and because of the frequent changes in prices.

Amendment No. 6.—A new Loss Limitation clause was approved, effective September 8, 1934, qualifying Amendment No. 2 by removing the unworkable proviso and giving the Administrator the right to suspend or modify the clause in respect to all articles, the price of which the manufacturer was found to be manipulating unfairly.

Amendment No. 7 provided for mandatory assessments.

Amendment No. 9 provided for the incorporation of the national or local or metropolitan code authorities. The national code authority was not incorporated.

A number of interpretations and administrative orders affecting the drug code were issued by NRA but time will not permit a discussion of them.

Although the Code Authority recognized the need for and the fairness of a reasonable labor mark-up, it realized the necessity of establishing a sound cost definition first as a basis. A request for a labor mark-up was filed in November 1933, and a mass of information in support of such a mark-up was submitted.

The Code Authority has been represented at many conferences and on several committees. The more important were the code meetings in March 1934, when several thousand of the most representative business men of the country were called to Washington to consider the entire question of regulation by codes. As a result, three committees were appointed to study the whole situation and submit recommendations and opinions to the Administrator. These committees were on (1) Capital Goods; (2) Consumer Goods; (3) Retail and Service Trades. Our Code Authority was represented on the second and third of these committees and the needs of the retail druggists were strongly presented.

Many troublesome questions and conflicts between the provisions of the several retail codes have arisen and have required much time and effort. Among

these may be mentioned soaps, medicinal foods, soft drinks, tobaccos, candies, drug sundries of various types, and many other products which are sold by various classes of retailers. These developments have led to closer relations and coöperation between the various retail code authorities. As an illustration, may be mentioned the general agreement for a single assessment under that code representing the principal business of the retailer. This agreement did away with the very troublesome multiple assessment. A strong effort was made to secure a reasonable plan for distributing the Blue Eagles and labor posters, making these easily available to the retail druggists.

It is impossible to enumerate every activity of the Code Authority or to more than indicate the time and effort that has been required. Those acquainted with Governmental procedure, and especially in a new and vast activity, can fully understand the situation.

The Code Authority held regular monthly meetings and many special meetings. Some meetings continued over several days. The correspondence with local code authorities, with individuals and with governmental officials and agencies has been very extensive. The expenses were heavy but the Code Authority operated well within its budget.

No one realizes more clearly than the members of the Code Authority and their associates the disappointments that followed the code efforts, and the apparent inability of those directing NRA to reach decisions and to maintain policies was discouraging. The frequent change in personnel in the NRA greatly interfered with the work and it was difficult to impress upon NRA that the retail drug industry has peculiar duties and processes of its own.

However, the effort and expense are believed to have been justified when the dangers that were avoided and the progress that was made are given full consideration. It has been a fine illustration of the benefits of organization, of the value of ethics and fair play in business, of the fact that a sound system of distribution is to the interest of consumer as well as of distributor, and that a fair price is not necessarily a higher price to the consumer.

With the decision of the Supreme Court in the Schechter case, it was necessary to promptly liquidate the affairs of the national, local and metropolitan code authorities. The national code authority liquidated, with legal advice, by completing its records, by paying its bills, and all expenses in the orderly closing of its affairs. As the national code authority had operated on a small balance, no dispersion of balance was necessary.

It was ordered at the final meeting held on June 8, 1935, that the records of the National Code Authority should be placed in the keeping of the secretary for one year and then turned over to the AMERICAN INSTITUTE OF PHARMACY for such historical use as can be made of them. In this way, the history of this very important social and economic experiment will be preserved and later it is hoped that it may be written up more completely.

Pharmacy Week will be observed during the week of October 21, 1935.

THE BADIANUS MANUSCRIPT, AN AZTEC PHARMACOPŒIA.*

BY EMILY WALCOTT EMMART.[1]

We are so accustomed to think of the introduction of Spanish culture into Latin America during the 16th century that the reciprocal transmission of Aztec learning into Europe has long been a neglected subject. In but one branch of learning, the field of medicine, Mexico has left her stamp upon the pages of European history. Among the works of the great herbalists, Carlos Clusius, Gaspard Bauhin, Colonna, Monardes, Hernandez, Gerard, Parkinson, and others of the 16th and 17th centuries, we find many references to Aztec medical practices. Of these only the volumes of Hernandez and Monardes were devoted entirely to the medical practices of Latin America. These, however, presented native medicine as seen through the eyes of Europeans. Only one Aztec written medical text has thus far come down to us. For the sake of brevity this manuscript has been referred to as the Badianus Manuscript.[2,3] This beautiful little manuscript holds the unique position of being the earliest herbal and pharmacopœia written on this side of the Atlantic and contains the earliest illustrations of some 204 plants and trees of Mexico, together with a list of ailments and diseases and the mode of treatment. The original text is the possession of the Vatican Library where its identity has been obscured by the title "Codex Barberini, Latin 241." The precise title of the manuscript is "A book of Indian Medical Herbs composed by a certain Indian physician of the College of Santa Cruz, who is not theoretically learned, but is taught only by experience. In the year of our Lord Saviour 1552." Plate I.

Until approximately six years ago the codex was unknown to the world at large. At that time it was discovered independently and almost simultaneously by Dr. Lynn Thorndike and Dr. Charles U. Clark. Dr. Clark brought back to the Smithsonian Institution a photographic copy and it has been from photostats of this that the present study and translation has been made.

The Badianus Manuscript is the work of two Indians who had been educated in the College of Santa Cruz, Mexico City. The text was originally written in Aztec by Martinus de la Cruz whose name appears in the dedication. From the postscript we learn that within the same year the work was partially translated into Latin, July 22, 1552, by one, Juan Badianus, a native of the district of Xuchimilco and reader in the College of Santa Cruz. Plate II. The manuscript is fittingly dedicated to Francisco de Mendoza and to his father, Antonio de Mendoza, first "Viceroy of this India" who according to the historian Mendieta, founded the college with his own funds. From the dedication also we learn that the book was intended as a gift to his "Holy Cæsarian Royal Catholic Majesty"—Charles V.

The manuscript is a complete book possessing a table of contents and is divided into thirteen chapters. As in some of the European herbals, there is an attempt to group ailments according to the region in the body, beginning with the

* Section on Historical Pharmacy, A. PH. A., Portland meeting, 1935.

[1] The Johns Hopkins University.

[2] Emmart, E. W.—1935, Concerning the Badianus Manuscript, an Aztec Herbal, "Codex Barberini, Latin 241" (Vatican Library). Smithsonian Miscellaneous Collections, Vol. 94, No. 2, May 18, 1935.

[3] Emmart, E. W.—1935, "An Aztec Medical Treatise: The Badianus Manuscript," Bulletin of the Institute of the History of Medicine, Vol. 3, No. 6, June 1935.

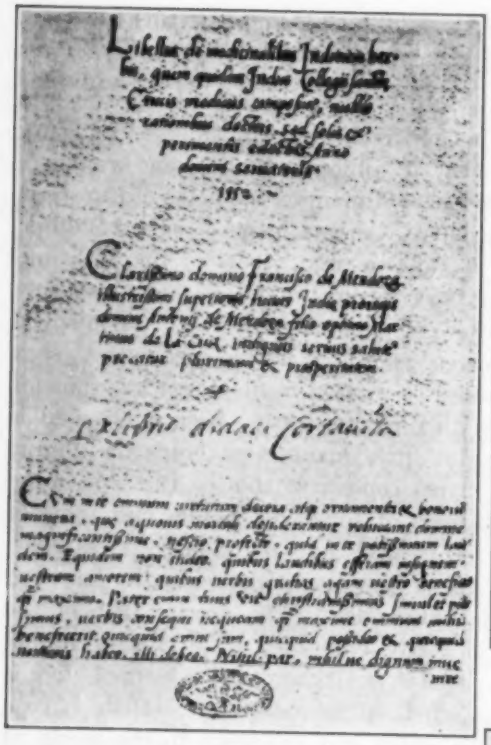

Plate I.

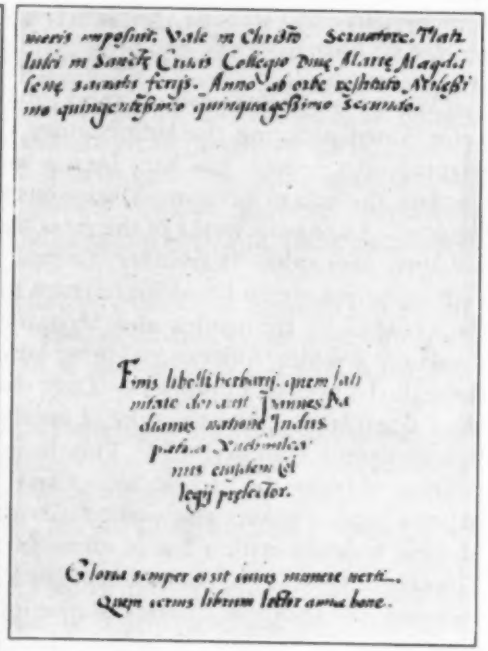

Plate II.

Plate IV.

Plate III.

Plate I.—Facsimile of the first page of the Badianus Manuscript (Codex Barberin, Latin 241). Plate II.—Facsimile of the last page of the Badianus Manuscript, showing the signature of Joannes Badianus (6th line). Plate III.—Badianus Manuscript, page 96. Remedy for warts. Plate IV.—Badianus Manuscript, page 110. Remedy for tubercules of the breast.

head and proceeding to the feet. In several chapters, however, this arrangement is vague. The plants which are in brilliant colors[1] are usually arranged at the top of the page above the description of the usage. Since the translation was made with the use of Pliny no equivalents could be found for the Aztec plant names so that these have remained unchanged along with the names of numerous stones and animals. There are in fact some 313 Aztec words in the manuscript, many of which do not appear in any dictionary. A complete analysis of the etymology of these words has been made and this has been of great assistance in identifying the plants botanically. Aztec nouns, as in German, are built upon descriptive roots so that the analysis of the word may relate to the color of the flower or its location or perhaps to some characteristic of the plant itself such as spiney, small, large, climbing or creeping, etc.

Not infrequently Aztec symbols are incorporated in the illustrations. For example, a small tree called Couaxocotl[2] is depicted as having two serpents climbing up in the tree toward the fruit. The word couaxocotl literally means serpent-fruit since coua is derived from coatl-serpent (Sim. 101)[3] and xocotl is the Aztec word for fruit (Sim. 705). Ants are sometimes shown climbing up the stem of plants possessing nectaries or clambering over the roots of others which grow near ant hills. The Aztec water symbol is frequently drawn under the roots of plants growing near running water.

Among the many interesting remedies there are treatments for mange, scabs, falling hair, cataract, tumor of the eyes, cold in the head, quinsy, fever, fatigue, for helminth infections, dysentary, hemorrhoids, medicine to produce lactation and numerous other remedies. The last chapter ends very fittingly with "certain signs of approaching death." Usually a page is given over to a single treatment with the principal plants illustrated at the top of the page. For example, above the remedy for warts is found the plant Tzotzocaxihuitl or wart-plant (tzotzocatl-wart, Sim. 670 and xihuitl-plant, Sim. 699). Under the picture of the plant one reads:

WART.

"A warty person is healed if you apply to the warts the leaves of helioscopium (wartwort) ground in water, so that the warts will become putrescent and so may be lifted off. It will be helpful also to rub the warts with water in which a human body has been washed." Plate III, Badianus Manuscript, page 96.

For tubercules on the breast we read as follows:

"The juice of ground cedar leaves and cones, of the leaves and root of Quauhyyauhtli (wild-incense), of the herbs Elocacatl (maize flower), the rush, Pocahucalizxiuhtontli (rare-little-plant) and Totecyxiuh (Herb of Totec, God of the Goldsmiths), stops a tumor growing on the breasts, if the swelling breasts be smeared with it." Plate IV, Badianus Manuscript, page 110.

Many of the remedies include ingredients which have long been of medical

[1] Through the kindness of Dr. Charles G. Abbot of the Smithsonian Institution, colored sketches of these plants have been obtained and it is hoped that the necessary funds will some day be obtained for a complete facsimile reproduction in color with introduction and foot-notes complete.

[2] Emmart, E. W., "An Aztec Medical Treatise: The Badianus Manuscript," Bull. of the Institute of the History of Medicine, Vol. 3, No. 6, June 1935, page 498, Pl. 5.

[3] Simeon, Reni, Dictionnaire de la Langue Nahuatl. (Paris, Imprimerie Nationale, 1885).

usage. Among them salt solution, a form of soil containing a large quantity of soda, onions and honey water, oil of indigo, egg white or yolk, charcoal etc. Numerous unguents were used as well as plasters with a base of feathers or hair or rubber. The bezoar stone, especially that from roosters, was of frequent usage. Numerous stones and variously colored earths and native wines were frequently mixed with the juices of plants and frequently parts of animals. Probably the earliest record in America of the use of Datura as a narcotic is to be found here, also the use of vanilla plant and the cocoa.

That the knowledge of medical plants and treatments of disease was considered equal to if not superior to that of Europe is indicated by the fact that the early Franciscan friars included Mexican medicine in the curriculum of the College of Santa Cruz. Even more significant is the fact that Philip II sent Dr. Francisco Hernandez, under the title of Protomedico of Spain to New Spain with orders to travel throughout Mexico and collect data on native plants and their usage. History records the fact that after the trade routes were established between the New World and Europe, roots, bark and herbs were shipped to Europe in large quantities. The spreading of Aztec medical knowledge to Europe was accomplished by the writings of Friar Bernardino de Sahagun, Dr. Francisco Hernandez and Dr. Nicholas Monardes, and by the tales of ship captain, travelers and merchants. A careful cross-referencing of the present herbal with other sixteenth century writers of Latin American botanical texts shows but little relationship except with that of Sahagun. This would be expected since he resided at Tlaltelolco during a large part of his life in Mexico, and may have been at one time the teacher of Aztec and Latin to both Martinus de la Cruz and Juan Badianus.

THE PHARMACIST AND THE PODIATRIST.*

BY W. F. AMBROZ.[1]

Heretofore, we as pharmacists have been detailing the doctors, the dentists, the veterinarians, the oculists, and all the while passing up the podiatrists. In this field yet untouched or merely scratched, pharmacists have an opportunity to practice the principles they have learned in manufacturing and dispensing pharmacy. Why not apply that knowledge and technique and in return establish a practice that will compensate for the time spent?

The podiatrist or chiropodist belongs to that branch of public health service, the same as the doctor, dentist or nurse. Some practicing physicians now refer cases to the podiatrist for treatment. Pharmacists, therefore, have another channel to work in a well-established and recognized field.

Each state has its own rules and regulations dealing with the podiatrist. Their state boards usually consist of two members of the medical state board and two practicing podiatrists. They have their code of ethics or trade laws which are similar to those of the medical profession governing their practice. In most states they are allowed to write prescriptions for external application. Podiatry schools

* Section on Education and Legislation, Portland meeting, 1935.

[1] Indianapolis College of Pharmacy.

and colleges have three-year courses which are required by most states for state examinations. These courses envelop all phases of study that deal with foot ailment such as: Anatomy, Physiology, Chemistry, Materia Medica, Pathology, Bacteriology, Surgery, Dermatology, Principles of Medicine, Diagnosis, Neurology, X-ray Therapy, Shoe Therapy, Ethics, Medical Jurisprudence, etc.

It is evident that the podiatrist is well trained in the art of caring for the feet, and can prescribe medicines to be used by his patient or will apply many of them himself. He will prescribe local applications, and it is in that connection the pharmacist should take notice.

Various coloring agents should be used with the preparations as well as essential oils for perfumes. Through the advice of the podiatrist the same preparations may be compounded by using different coloring agents and odors. The labels used on the prescriptions should bear the podiatrist's name and the name of the pharmacy.

This field is now being supplied with many proprietaries; the pharmacist can acquaint the podiatrist with many official formulas and probably some original ones which he can compound more economically to the purchaser and with greater profit for himself.

The preparations listed are limited, yet indicate a few materials the podiatrist uses. They can be compounded by pharmacists, and dispensed on prescription or otherwise.

A.—Dusting Powders.

1.	Antiseptic Powder	N. F.
2.	Compound Powder of Talc.	N. F.
3.	Phenol	1.0 Gm.
	Camphor	3.0 Gm.
	Exsiccated Alum	96.0 Gm.
4.	Salicylic Acid	4.0 Gm.
	Boric Acid	5.0 Gm.
	Starch	16.0 Gm.
	Purified Talc	60.0 Gm.
5.	Salicylic Acid	10.0 Gm.
	Bismuth Subnitrate	15.0 Gm.
	Zinc Stearate	10.0 Gm.
	To be used for Bromidrosis.	
6.	Salicylic Acid	2.0 Gm.
	Tannoform	13.0 Gm.
	Talcum	15.0 Gm.
	To be used for Hyperhidrosis.	
7.	Salicylic Acid	2.0 Gm.
	Tannic Acid	5.0 Gm.
	Orris Root	33.0 Gm.
	Alum	60.0 Gm.
8.	Bismuth Subgallate	
	Boric Acid *aa*	15.0 Gm.
9.	Bismuth Subnitrate	20.0 Gm.
	Starch	10.0 Gm.
	Purified Talc	70.0 Gm.
10.	Mercuric Chloride	0.06 Gm.
	Sodium Salicylate	26.0 Gm.
	Prepared Chalk	4.0 Gm.
11.	Zinc Oxide	15.0 Gm.
	Boric Acid	30.0 Gm.
	Purified Talc	45.0 Gm.
12.	Thymol Iodide	8.0 Gm.
	Zinc Oxide	4.0 Gm.
	Lycopodium	48.0 Gm.
13.	Salol	2.5 Gm.
	Purified Talc	97.5 Gm.

B.—Emollients.

These substances and preparations are dispensed in ointment, mixture or solution form, for the purpose of soothing.

1.	Cacao Butter	U. S. P.
2.	Camphor Liniment	U. S. P.
3.	Ointment of Rose Water	U. S. P.
4.	Carron Oil	U. S. P.
5.	Camphor Ointment	N. F.
6.	Ointment of Zinc Stearate	N. F.
7.	Calamine Lotion	N. F.
8.	Compound Calamine Lotion	N. F.
9.	Glycerin	
	Rose Water—equal parts.	
10.	Tragacanth	0.5 Gm.
	Boric Acid	1.5 Gm.
	Glycerin	1.5 cc.
	Water *q. s.*	100.0 cc.
11.	Balsam of Peru	25.0 Gm.
	Sulphonated Bitumen	25.0 Gm.

	Wool Fat	50.0 Gm.
	Petrolatum	50.0 Gm.
12.	Phenol	2.0 Gm.
	Menthol	6.0 Gm.
	Petrolatum	60.0 Gm.
	Wool Fat	32.0 Gm.
13.	Lead Oleate Plaster	48.0 Gm.
	Olive Oil	8.0 Gm.
	Boric Acid	6.0 Gm.
	Tannic Acid	2.0 Gm.
	Petrolatum	36.0 Gm.

C.—Massage Preparations.

These substances are dispensed in ointment, mixture or solution form, and applied before or after treatment, usually with a vibrator.

1.	Witch Hazel Water	N. F.
2.	Rubbing Alcohol	
3.	Menthol	2.5 Gm.
	Tragacanth	4.0 Gm.
	Glycerin	12.0 cc.
	Alcohol	15.0 cc.
	Water *q. s.*	300.0 cc.
4.	Gelatin	2.0 Gm.
	Water	48.0 cc.
	Glycerin	5.0 cc.
	Glycerite of Boroglycerin	45.0 Gm.
5.	Vanishing Creams	
6.	Fluidextract of Hamamelis	10.0 cc.
	Wool Fat	60.0 Gm.
	Petrolatum	30.0 Gm.
7.	Menthol	0.8 Gm.
	Camphor	0.8 Gm.
	Eucalyptol	3.0 Gm.
	Petrolatum	96.0 Gm.

D.—Karyolytics.—Softening of Abnormal Growths.

Used by the podiatrist.

1.	Soap Liniment	U. S. P.
2.	Liniment of Soft Soap	U. S. P.
3.	2% Aqueous Phenol Solution	
4.	2% Aqueous Potassium Hydroxide Solution	

E.—Escharotics.

Used by the podiatrist and in some cases by the patient in the removal of corns, tumors, warts, etc.

1.	Solution of Zinc Chloride	U. S. P.
2.	Nitric Acid	U. S. P.
3.	Glacial Acetic Acid	U. S. P.
4.	Trichloracetic Acid	U. S. P.
5.	Compound Collodion of Salicylic Acid	N. F.
6.	Saturated Solution of Salicylic Acid in Alcohol	
7.	40% Aqueous Potassium Hydroxide Solution	
8.	50% Aqueous Silver Nitrate Solution	
9.	Saturated Aqueous Solution of Potassium Dichromate	
10.	Chromic Acid—used with enough water to form a paste	
11.	Copper Sulphate in Sticks, Powder or a 15% Aqueous Solution	
12.	60% Salicylic Acid Ointment	
13.	Trinitrophenol	1.3 Gm.
	Alcohol *q. s.*	30.0 cc.

F.—Skin Lesions.

(*a*) *Dry, Scaly, Exfoliate.*

1.	Ointment of Mercuric Nitrate	N. F.
2.	Modified Whitfield's Ointment	
3.	Sulphonated Bitumen	8.0 Gm.
	Glycerin	16.0 Gm.
	Rose Water	16.0 cc.

(*b*) *Ulcerated and Tender.*

1.	Ointment of Tannic Acid	U. S. P.
2.	Calamine Lotion	N. F.
3.	5% Aqueous Solution of Sodium Thiosulphate	
4.	Saturated Aqueous Solution of Epsom Salt	
5.	Borax—as a dusting powder	
6.	5% Ammoniated Mercury Ointment	
7.	8% Ointment of Scarlet Red.	
8.	Tincture of Iodine U. S. P.—diluted one-half with glycerin	
9.	5% Gentian Violet in 50% Alcohol	
10.	Acriflavine Hydrochloride 5%, in 55 parts of Alcohol, 10 parts of Acetone and 35 parts of Water	
11.	Saturated Aqueous Solution of Boric Acid	

(*c*) *With Itching.*

1.	Dobell's Solution	N. F.
2.	Burow's Solution	N. F. diluted one to ten
3.	5% Ammoniated Mercury Ointment containing 1 cc. of Liquefied Phenol per 100 Gm.	
4.	10% Salicylic Acid Ointment	
5.	Borax	8.0 Gm.
	Liquefied Phenol	2.0 cc.
	Glycerin	2.0 cc.
	Water *q. s.*	250.0 cc.

(*d*) *Vesicular.*

1.	Solution of Hydrogen Peroxide	U. S. P.

2. Lassar's Zinc Paste N. F.
3. Tincture of Iodine U. S. P. Half strength
4. Whitfield's Ointment
5. 10% Ointment of Ammoniated Mercury containing one drachm of Sublimed Sulphur to the ounce
6. Saturated Solution of Salicylic Acid in Alcohol
7. 70% Alcohol
8. 1% Phenol Solution in 9% Alcohol and Water
9. Mercuric Chloride 1 to 1000

G.—Preparations Used in the Treatment of Ring Worm Infections.

1. Tincture of Iodine U. S. P. diluted half with Glycerin
2. 12.5% Aqueous Solution of Sodium Thiosulphate
3. Mercuric Chloride 1 to 250
4. Mercuric Chloride 0.18 Gm.
   Formaldehyde 0.42 cc.
   Acetone 10.00 cc.
   Spirit of Camphor 90.00 cc.
5. Biniodide of Mercury 0.12 Gm.
   Tincture of Iodine *q. s.* 30.00 cc.
6. Ointment of Chrysarobin 5.0 Gm.
   Ointment of Tar 55.0 Gm.

H.—Hyperhidrosis and Bromidrosis.

Used by the podiatrist or by the patient as directed by the podiatrist.

1. Glycerite of Tannic Acid U. S. P.
2. Potassium Permanganate 1 to 1500. Immerse feet for 5 or 10 minutes once or twice a day.
3. 4% Formaldehyde
4. 10% Aqueous Solution of Aluminum Chloride
5. 5% Tannic Acid Solution or 10% Ointment
6. 5% Aqueous Solution of Alum.
7. Potassium Permanganate 0.5 Gm.
   Thymol 1.0 Gm.
   Water *q. s.* 480.0 cc.
8. Compound Solution of Cresol 4.0 cc.
   Alcohol 96.0 cc.
9. Aluminum Chloride 10.0 Gm.
   Alcohol 25.0 cc.
   Water *q. s.* 100.0 cc.

I.—Skin Stimulants.

Substances used to assist in healing.

1. Balsam of Peru U. S. P.
2. 3 to 5% Solution of Salicylic Acid in Alcohol
3. Ointment of Salicylic Acid, 2% in Cold Cream
4. Strong Silver Protein 15.0 Gm.
   Water 10.0 cc.
   Hydrous Wool Fat 15.0 Gm.
   Petrolatum 60.0 Gm.
5. Scarlet Red 4.0 Gm.
   Olive Oil 12.0 Gm.
   Hydrous Wool Fat 30.0 Gm.
   Petrolatum 54.0 Gm.

DENTAL FORMULAS.

Mouth Rinse.

Menthol	0.5 Gm.
Thymol	0.5 Gm.
Eucalyptol	2.5 cc.
Methyl Salicylate	0.6 cc.
Alcohol	150.0 cc.
Distilled Water, *q. s.*	1000.0 cc.

This is an aromatic mouth rinse similar to Liquor Antisepticus, but without any strongly antiseptic substances. When diluted 2–3 times, it is suitable for the spray bottle.

Topical Anesthetic.

Ethyl Aminobenzoate (Benzocaine)	5.00 Gm.
Camphor	0.25 Gm.
Menthol	0.25 Gm.
Oil of Clove	0.50 cc.
Oil of Cinnamon	0.50 cc.
Alcohol to make	100.00 cc.

A few drops applied to the gum with a medicine dropper or pipette will produce surface anesthesia within 15–20 seconds. The effects persist for 10 to 15 minutes and are devoid of any subsequent irritation. Rubbing is not necessary, neither hastening nor increasing the depth of anesthesia.

Variations in flavors, such as using oils of Spearmint, Wintergreen, Peppermint, Sassafras, etc., will result in preparations according to personal tastes. The amount of Benzocaine can be increased *up to 10%* but should *not* be reduced *below 3%* for best results.

THE DEPARTMENT OF THE AMERICAN ASSOCIATION OF COLLEGES OF PHARMACY

C. B. JORDAN—CHAIRMAN OF EXECUTIVE COMMITTEE, A. A. C. P., EDITOR OF THIS DEPARTMENT.

SUMMARY OF THE PROCEEDINGS OF THE 1935 MEETING.

The thirty-sixth annual meeting of the American Association of Colleges of Pharmacy was held at the Multnomah Hotel, Portland, Oregon, Aug. 5 and 6, 1935. Eighty-nine delegates from 38 member-colleges were in attendance. Staff members from several non-member colleges in the United States and Canada were present at some of the sessions.

ADDRESS OF THE PRESIDENT.

President Little emphasized the necessity of colleges going forward and outlined the following procedure: "(1) Careful and conservative selection of students; (2) Stressing professional training in undergraduate work; (3) Adequate training and advice as to how these possibilities of professional service can best be realized following graduation; (4) Enlisting our services in promoting coöperative endeavor between physicians, dentists and pharmacists, thus increasing their mutual effectiveness in behalf of public health." He discussed the question of practical experience and urged the adoption of some policy as early as possible. Graduate work should be developed in a conservative manner. His recommendations were referred to the Committee on Resolutions.

REPORT OF THE SECRETARY-TREASURER.

Secretary Cooper reported a membership of 54 colleges with one in arrears for dues. Distribution of Proceedings during the year was unusually wide. The balance on hand was $1053.08.

The report was accepted and a committee appointed to audit the accounts which committee reported them correct.

REPORT OF THE EXECUTIVE COMMITTEE.

Chairman Jordan, of the Executive Committee, submitted the following summary of preliminary training of entering students in member-colleges.

Total number entering for the year 1934–1935	2174
Number of high school graduates	2169
Number of special students	15
Number that had previous college training	600

This is an increase of nearly 10 per cent over the number entering in 1933–1934. Students with previous college training represented 27.6 per cent of the number entering. Inasmuch as the 1934 meeting was in May, graduates were reported for two years.

COLLEGE YEAR, 1933–1934.

Number receiving degrees from 3-year courses	1146
Number receiving degrees from 4-year courses	714
Total number completing 3- and 4-year courses	1860
Advanced degrees awarded:	
Master of Science	27
Doctor of Philosophy	11
Honorary degrees:	
Doctor of Science	1
Doctor of Philosophy	1

COLLEGE YEAR, 1934–1935.

Number receiving degrees from 3-year courses	314
Number receiving degrees from 4-year courses	550
Total number completing 3- and 4-year courses (including 9 duplicates)	864
Advanced degrees awarded:	
Master of Science	31
Doctor of Philosophy	8
Honorary degrees	4

Comparison of the two years cannot be made because the figures for 1934–1935 are incomplete, but it is obvious that graduates are much fewer than in 1933–1934.

Quoting from the report of the second series of visits to member-colleges, Dean Jordan showed that there was much to be commended but he directed attention to three conditions that need correcting: lack of adequate budgets, inadequate libraries and library facilities, and too heavy teaching loads.

Announcement was made that the Association had been accepted as an associate society of the American Association for the Advancement of Science.

The Comittee recommended some minor revision of by-laws, all of which were adopted.

The Committee recommended that schools that had resigned from membership and that had since announced the time when they will not admit students to a course of less than four years be invited to participate in the discussions of the Association and that, if they accept the invitation, copies of the Proceedings and all official communication to member-colleges be sent to them.—*Adopted.*

Report of the Syllabus Committee.—Dean Beard reported for his Committee and expressed the hope that the three sponsoring bodies will leave to the judgment of the Committee the time of issuing the next revision.—*Accepted.*

Report of the Delegate to the American Council on Education.—Dr. Lyman reported concerning the work of the Council and that there had been an increase in membership and an increase in grants from the General Education Board for the support of the Council's work.—*Accepted.*

Report of the Committee on Educational Standards.—Chairman Spease, of the Committee, discussed the overlapping of the work of this Committee and the Committee on Membership Standards, the reasons for requiring executive officers to be pharmacists and the advisability of requiring students to spend four years in a college of pharmacy.—Report received and recommendations referred to the Committee on Resolutions.

Report of the Committee on Curriculum and Teaching Methods.—Dean Wilson reported that the Committee had considered some matters relative to courses in botany that had been referred to it at the 1934 meeting.—Recommendations referred to the Committee on Resolutions.

Report of the Committee on Relation of Boards and Colleges.—General Chairman D. B. R. Johnson, presented a number of resolutions that had come from the districts that held meetings. The report was received and at a later session the recommendations were referred to the Executive Committee.

Report of the Committee on Libraries.—Chairman Lee, of the Committee, submitted much valuable data gathered from the replies to a questionnaire.—Report accepted and the recommendations referred to the Committee on Resolutions.

Report of the Committee on Problems and Plans.—Chairman Lyman, of the Committee, stated that the work of the year had been to get the reaction of outstanding men concerning the studies that should be undertaken first. These with other suggestions by the Committee were discussed.—Report accepted and the recommendations referred to the Committee on Resolutions.

Report of the Committee on the Establishment of a Pharmaceutical Corps in the United States Army.—In the absence of Chairman Leigh, the report was read by Vice-Chairman DuMez.—Report accepted and the recommendations referred to the Committee on Resolutions.

Report of the Committee on the List of Crude Drugs Prepared by District No. 2.—Chairman Youngken, reported extensive study made by members of his Committee which included one

person from each district.—Report accepted and the recommendations referred to the Committee on Resolutions.

Report of the American Council on Pharmaceutical Education.—Dean DuMez reported that the work of formulating standards would be started at once and assignments of work would be out shortly after schools opened.—*Accepted.*

REPORTS OF OTHER COMMITTEES.

A number of reports that contained no recommendations were received. Professor Schick's report for the Committee on Activities of Students and Alumni contained many valuable suggestions.

Special committees reporting without recommendations were the following: Committee on Student Branches of the AMERICAN PHARMACEUTICAL ASSOCIATION, Professor Webster; Committee on Food and Drug Legislation, Dean Jordan.—*Accepted.*

Though not inactive the Committee on Membership Standards had nothing ready to report.

For the Committee on Code Matters, Chairman Rudd reported "Died, buried, forgotten," and the report was accepted.

REPORTS OF SPECIAL REPRESENTATIVES.

Dr. Youngken reported on Biological Abstracts, Dr. Rising for the representatives to the National Conference on Pharmaceutical Research, Professor Hayman for the representatives to the National Drug Trade Conference, Dean McCloskey as representative to the National Association of Retail Druggists.—*Reports accepted.*

REPORT OF THE COMMITTEE ON RESOLUTIONS.

The Committee on Resolutions, consisting of Dean Wilson, *Chairman*, Professor Stuhr, Professor Eby, Dean Mollett and Dean O'Connell, submitted the following report:

From the President's address:

"1. We recommend that all matters relating to apprenticeship be referred to the Executive Committee with a request for proper consideration and report at the 1936 meeting."—*Adopted.*

"2. We recommend that the Committee on Curriculum and Teaching Methods be requested to compile all available material on curricula and present it at the 1936 meeting for proposal as an 'ideal pharmaceutical college curriculum.' "—*Adopted.*

"3. We recommend that the matter of publishing all of the past presidential addresses be referred to the Executive Committee."—*Adopted.*

"4. We recommend that the Committee on Food and Drug Legislation be continued."—*Adopted.*

"5. We recommend the appointment of a Committee on Professional Relations with duties as outlined by the President to consider the possibility of joint meetings of the A. M. A. and A. PH. A. in the future."—*Adopted.*

"6. We recommend the appointment of a special committee on pharmacy aptitude tests."—*Adopted.*

From the report of the Committee on Curriculum and Teaching Methods:

"1. We recommend that the Syllabus Committee on the occasion of the next revision of the Syllabus be requested to incorporate an outline for a course in pharmaceutical botany in addition to the outline for a general course."—*Adopted.*

"2. We recommend that the revision of the Syllabus in the future be on a decennial basis and contemporary with the issuance of the U. S. P. and N. F."—*Adopted.*

From the Report of the Committee on Problems and Plans:

"1. We recommend that the Committee on Problems and Plans with the addition of Secretary Cooper be authorized to ascertain the cost and feasibility and desirability of the publication of a quarterly journal to be known as the American Journal of Pharmaceutical Education, the report to be made at the next annual meeting."—*Adopted.*

"2. We recommend that Secretary Cooper be requested to write Dr. H. B. Ward a letter of appreciation for the assistance he has rendered pharmacy as Secretary of the American Association for the Advancement of Science."—*Adopted.*

From the Report of the Committee on Educational Standards:

"1. We recommend that the Committee on Educational Standards and the Committee on Membership Standards be combined under the name, 'The Committee on Educational and Membership Standards.' "—*Adopted.*

The following recommendation, offered as a substitute for that of the Committee, was adopted:

"2. We recommend that it be the sense of the Association that in case of appointments to administrative positions in colleges of pharmacy, other things being equal, preference be given to men who have had pharmaceutical training."

The recommendation having to do with the length of time that a student must spend in a college of pharmacy, which was disapproved by the Committee on Resolutions, after much discussion, was tabled. Immediately thereafter a motion prevailed that the whole matter be referred to the Executive Committee for its consideration, report to be made at the 1936 meeting.

From the Report of the Committee on Libraries:

"We recommend that the Committee on Libraries be continued and their recommendations approved."

The recommendations referred to are:

"1. That the American Association of Colleges of Pharmacy make detailed studies and reports upon the following items concerning pharmacy libraries:

"(*a*) A minimum periodical and journal list.

"(*b*) A minimum list of standard reference books covering the fields of pharmacy, chemistry, materia medica, etc.

"(*c*) The qualifications of school librarians.

"(*d*) The extent and scope of so-called library courses as listed in the catalogs.

"(*e*) The feasibility of effecting exchanges of duplicate library material for the benefit of all the libraries."

"2. That in the reappointment of this Committee, it be given a tenure of at least three years."—*Adopted.*

From the Report of the Committee on the List of Drugs Submitted by District No. 2:

"1. That the American Association of Colleges of Pharmacy is not in favor of restricting the teaching of drugs in its member-colleges to any arbitrarily drafted list nor does it approve of any scheme of elimination except by extensive national survey.

"2. That we recommend to the National Association of Boards of Pharmacy that the scope of examinations on drugs given by all state boards of pharmacy should embrace the U. S. P. and N. F. drugs and that questions pertaining to the N. N. R. and other unofficial products should be left to the discretion of the respective boards who are in position to determine the frequency of use and decide on the importance of the medicinals prescribed in the particular district concerned."

"In the judgment of the Committee on Resolutions, the two recommendations constitute a matter for consideration in a joint meeting of the Boards and Colleges and the Committee so recommends."—*Adopted.*

From the Committee on the Establishment of a Pharmaceutical Corps in the United States Army:

"1. That the Committee be continued, that it be instructed to continue its efforts to effect improvement in the pharmaceutical service in the Army and to obtain the recognition therein for pharmacy of the status to which it is entitled by virtue of the traditions and the useful service which it is prepared by education and training to render.

"2. That the Committee be instructed to coöperate with the Surgeon General in obtaining the passage of legislation which will bring about the substance of Recommendation No. 1.

"If the objective as stated in No. 1 cannot be attained by this procedure, it is recommended:

"3. That the Committee be instructed to obtain the desired improvement in pharmaceutical service and its concomitant recognition in the Army by direct appeal to Congress."

As summarized by the Committee on Resolutions,

"We recommend that the Committee on the Establishment of a Pharmaceutical Corps in the United States Army be continued and instructed to use its best judgment in securing proper recognition for pharmacy in the United States Army."—*Adopted.*

"The following resolution originated in the joint meeting of the Boards and Colleges:

"That a committee be appointed to consider jointly with a similar committee from the N. A. B. P. the character of the examination questions given by examining boards and colleges and to present a report at a subsequent joint meeting of the Boards and the Colleges."—*Adopted.*

The following resolution was offered by Dr. Lyman and modified by Dean Bradley.

"That we recommend to the Council of the AMERICAN PHARMACEUTICAL ASSOCIATION that our annual meeting be held either during the third or fourth week of August."—*Adopted.*

The following resolution was offered by Dr. Rudd.

"WHEREAS, The work of the American Association of Colleges of Pharmacy has increased to such an extent that its sessions are hopelessly prolonged with committee reports and other highly important business, and

"WHEREAS, More time for full discussion would make our meetings more interesting and instructive, *be it*

"*Resolved, First,* that the Executive Committee use its best efforts to have all committee reports limited to not more than ten minutes, except in unusual cases; *second,* that more time be arranged for discussions."—*Adopted.*

PAPERS.

Dr. Lee and Dr. DeKay presented a paper on "The Four-Year Course in Pharmacy" which brought out the changes and trends that are evident since 1929 when they made a similar study.

Two papers which were directly connected with the work of the Committee on Problems and Plans were presented: "Objective Tests" by Dr. DeKay with sample questions on qualitative analysis and "Objectives and Achievement Tests" by Dr. Klemme with sample questions on organic chemistry.

A third paper, "The Teaching of Bacteriology to Pharmacy Students," was presented by Dr. Reddish.

ANNUAL DINNER.

The guest speaker at the annual dinner was Dr. E. H. Lauer, Dean of Faculties, at the University of Washington.

NEW MEMBER-COLLEGE.

The Executive Committee recommended that the application of the Connecticut College of Pharmacy for membership be accepted. The vote, completed by mail since the convention, gave more than the necessary two-thirds majority.

OFFICERS FOR 1935–1936.

President: Robert C. Wilson, Athens, Georgia.
Vice-President: Homer C. Washburn, Boulder, Colorado.
Secretary-Treasurer: Zada M. Cooper, Iowa City, Iowa.
Chairman of Executive Committee: Charles B. Jordan, La Fayette, Indiana.
Members of the Executive Committee (to serve two years): Ernest Little, Newark, New Jersey; Rufus A. Lyman, Lincoln, Nebraska.
Member of the Syllabus Committee: Henry A. Langenhan, Seattle, Washington.

JOINT SESSION.

The report of the Fairchild Scholarship Committee was presented by Chairman Eberle. The winner was Mr. Zienty who was graduated in June from the University of Illinois College of Pharmacy.

Dr. Lemon presented a paper, "Examination Questions, Both College and Board Questions." Dr. Fischelis talked briefly on "The Possibilities and Limitations of Coöperation between Boards of Pharmacy and Colleges of Pharmacy."

Dean D. B. R. Johnson read a report which included resolutions coming from various district meetings. The report was received and the resolutions referred to the Committees on Resolutions of the individual bodies.

CONFERENCE OF TEACHERS OF PHARMACY.

The program consisted of a discussion of "Pharmaceutical Technique as Described in the Syllabus." Officers elected for the ensuing year were Dean E. T. Motley, *Chairman;* Dean R. C. Wilson, *Vice-Chairman;* Dr. C. O. Lee, *Secretary.*

CONFERENCE OF TEACHERS OF CHEMISTRY.

In the absence of Chairman Jacobs, Dr. Uhl presided.

Two papers were read and discussed: "Instruction about Synthetics" by Dr. Lynn and "The Teaching of Food and Drug Analysis" by Professor Glover.

Officers elected for the ensuing year were: *Chairman*, Dr. A. H. Uhl; *Secretary*, Dr. Lewis C. Britt.

CONFERENCE OF TEACHERS OF PHARMACOGNOSY AND PHARMACOLOGY.

In the absence of Chairman Schwarz, Dean Mollett presided.

"Pharmacology: Definition and Scope of the Course for Pharmacy Majors" was discussed by Dr. Burlage and Dr. Serles.

A paper, "Should the Term Materia Medica Be Deleted from Our Catalogs and from State Board Examinations" was presented by Dean Mollett.

Dr. Bacon discussed "Should Undergraduate Students in Pharmacy Do Animal Experimentation or Should the Course Be Taught by Demonstrations," showing a moving picture of the pharmacology of digitalis in connection with his discussion.

"Biological Assays for Undergraduate Students" was discussed by Dean D. B. R. Johnson.

"Correlation of Courses in Pharmacology and Physiology" was discussed by Dr. Dickinson.

The following papers were read by title: "Pharmacology as Basis for Improving Relations with Physicians," Dr. B. V. Christensen; "Suggestions for a Course in Botany for Pharmacy Students," Dr. Bienfang; "A Study of the Records of the Same Class in Botany and Pharmacognosy," Dr. Dunn; "The British Pharmacognosy Syllabus," Dr. Bienfang; "The Content of a Pharmacognosy Course," Professor Fiero.

Officers elected for the ensuing year were *Chairman*, Dean C. E. Mollett; *Secretary*, Dr. Ralph Bienfang.

CONFERENCE OF TEACHERS OF PHARMACEUTICAL ECONOMICS.

In the absence of Chairman Olsen, Dean McCloskey presided.

The following topics were discussed: "Trends in Drug Store Profits, 1932, 1933, 1934," "Accounting Records Necessary and Desirable in Drug Stores," "The Operation of State Fair Trade Acts for Re-sale Control."

Officers elected for the ensuing year were *Chairman*, Dean J. F. McCloskey; *Secretary*, Dean W. H. Rivard.

ZADA M. COOPER, *Secretary*.

Approved: Charles B. Jordan, *Chairman*, Executive Committee.

We are in receipt of a monograph on "The Leech Monopoly in Croatian Slavonica," by Prof. Dr. A. Vrgoc (Zagreb), published in 1935, in Apothekarskog Vjesnikas. We thank the author.

We are also indebted to Dr. Antun Vrgoc for a copy of his Pharmacognosy and Commentary on the Jugoslavian Pharmacopœia, published in Croatian. The author has autographed the volume which contains very nearly 400 illustrations, more than 500 pages of text and includes a useful drug map of Jugoslavonica. The citation of literature covers two pages. The volume is a valuable addition to the Library and appreciation is expressed to the author.

We are in receipt of a reprint from *Berichte* of the German Pharmaceutical Society dealing with investigations of the leaves of interesting members of polypodiaceæ—from the pharmaceutical Institute of the University of Basel.

The Philadelphia College of Pharmacy and Science has donated a copy of "Popular Science Talks," Volume XII. The volume contains the following addresses:

"The Herbs and the Stars," by Charles H. LaWall; "Conquest of the Planet Earth," by George Rosengarten; "Living Light," by Arno Viehoever; "Tooth Truths," by Ivor Griffith; "Free Air," by Arthur Osol; "Famous Finds by Pharmacists," by John Kramer; "The History and Romance of Microscopy," by Louis Gershenfeld; "Silver, Metal of the World," by Clifton C. Pines.

UNITED STATES PHARMACOPŒIA.

ABSTRACT OF PROPOSED CHANGES WITH NEW STANDARDS AND DESCRIPTIONS. ELEVENTH REVISION.

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PART III—VOLATILE OILS.

The Pharmacopœial Convention of 1930 recommended that "abstracts of changes proposed for the U. S. P. XI and new standards and descriptions" be published before final adoption, that those who are not members of the Revision Committee may have an opportunity for comment and criticism.

In compliance with this recommendation, the following abstracts are submitted. The nomenclature and the exact wording does not necessarily represent that to be finally adopted.

Comments should be sent to the chairman of the Revision Committee.

E. FULLERTON COOK,
43rd and Woodland Avenue,
Philadelphia, Pa.

Eucalyptol.—The word "cooling" is added to the physical description of taste. The statement regarding solubility in water is omitted.

A refractive index range of 1.455 to 1.460 has been added.

Eugenol.—The specific gravity range has been changed to 1.066 to 1.070 at 25° C.

A refractive index range of 1.540 to 1.542 has been added.

The test for hydrocarbons now reads as follows:

> "Dissolve 1 cc. of Eugenol in 20 cc. of half-normal sodium hydroxide and add 18 cc. of distilled water: an immediate clear solution results (*hydrocarbons*) which may become turbid when exposed to air."

Methylis Salicylas.—A refractive index range of 1.535 to 1.538 has been added.

The test for petroleum products has been omitted as birch oil sometimes gives positive results.

The following tests have been revised or added:

> "Five cc. of Methyl Salicylate when shaken with 25 cc. of freshly boiled and cooled distilled water requires not more than 0.45 cc. of tenth-normal sodium hydroxide for neutralization, phenol red T.S. being used as the indicator (limit of free acid)."

Tests for purity. A solution of one volume of Methyl Salicylate in two volumes of alcohol is neutral or slightly acid to moistened litmus paper.

Oleum Amygdalæ Amaræ.—Assay of benzaldehyde. Add 0.1 cc. of bromphenol blue indicator to 25 cc. of half-normal hydroxylamine hydrochloride and titrate with half-normal alcoholic potassium hydroxide to the production of a greenish blue color. Pour this mixture into a flask, fitted with a glass stopper, containing about 1 Gm. of Oil of Bitter Almond, accurately weighed. Shake well and then titrate with half-normal alcoholic potassium hydroxide until the yellow color changes to a greenish blue. Continue shaking and titrating until the greenish blue color is permanent. Multiply the number of cc. of half-normal potassium hydroxide used by 5.3 and divide the product by the weight of oil of bitter almond taken to obtain the per cent.

Oleum Anisi.—The labeling requirement has been deleted. A requirement is added whereby congealed oil should be melted and mixed before using. The refractive index range is now 1.5530–1.5600.

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* Permission to reprint for purposes of comment can be had on application to the Chairman of the Board of Trustees, James H. Beal, Fort Walton, Fla.

Oleum Aurantii.—Change color description to read "a yellow or intense yellow or orange or deep orange liquid." The amount of oil taken for the residue test has been reduced from 25 Gm. to 10 Gm.

Oleum Cadinum.—"Wood" has been changed to "woody portions" in the definition.

The solubility test in ether has been changed to read as follows:

> "Almost completely soluble in Ether with not more than a slight flocculent precipitate."

The specific gravity range has been changed to "0.950 to 1.055 at 25° C."

Oleum Cari.—The only change in this test is that the strength of the sodium bisulfite solution used in adjusting the neutrality has been increased from 5 per cent to 25 per cent.

Oleum Caryophylli.—The only change in this text is the substitution of normal potassium hydroxide for potassium hydroxide T.S.

Oleum Chenopodii.—The refractive index range is now 1.4723 to 1.4770 at 20° C.

Oleum Cinnamomi.—The word "steam distillation" is omitted in the definition. Changes in the assay method have been made as under *Oleum Cari*. The refractive index range is now 1.6020 to 1.6135.

Oleum Coriandri.—The optical rotation has been changed to "varies from +8° to +15° in a 100-mm. tube at 25° C." The refractive index range is now "1.4620 to 1.4720 at 20° C."

Oleum Eucalypti.—The solubility ratio in 70 per cent alcohol has been changed to read "The oil is soluble in 5 volumes of 70 per cent alcohol, by volume."

The former test for phellandrene nitrite has been replaced by the following:

> "Mix 2.5 cc. of oil of eucalyptus with 5 cc. of petroleum benzin, add 5 cc. of a solution of sodium nitrite made by dissolving 5 Gm. of sodium nitrite in 8 cc. of distilled water, then gradually add 5 cc. of glacial acetic acid. No crystals of phellandrene nitrite should form within ten minutes."

The refractive index range is now "1.4580 to 1.4700 at 20° C."

Oleum Juniperi.—The refractive index range is now "1.4780 to 1.4840 at 20° C."

Oleum Lavandulæ.—The solubility test in 70 per cent alcohol now reads: "The oil is soluble in 4 volumes of 70 per cent alcohol by volume."

The refractive index range is now "1.4590 to 1.4700 at 20° C."

Oleum Limonis.—The new text for oil of lemon is as follows:

OLEUM LIMONIS.

Oil of Lemon.

Ol. Limon.-Lemon Oil.

The volatile oil obtained by expression without the aid of heat from the fresh peel of the fruit of *Citrus medica* var. *Limonum* (Risso) Hooker filius (Fam. *Rutaceæ*), with or without previous separation of the pulp and the peel.

Description and physical properties.—A pale yellow to deep yellow or greenish yellow liquid, having the characteristic odor and taste of the outer part of fresh lemon peel.

Tests for identity and purity. The Oil is soluble in 3 volumes of alcohol, and in all proportions in dehydrated alcohol, carbon disulfide, and in glacial acetic acid.

Specific gravity: 0.849 to 0.855 at 25° C.

Optical rotation: Varies from +57° to +65.5° in a 100-mm. tube at 25° C.

Refractive index: 1.4742 to 1.4755 at 20° C.

A solution of the recently expressed Oil in alcohol (1 in 3) is neutral or only slightly acid to moistened litmus paper.

Oil of Lemon when distilled as described under *Oleum Aurantii*, gives the following results: The angle of rotation of the first 5 cc. is not more than 5 degrees less than that of the original Oil. The refractive index of this same portion is not less than 0.0010 and not more than 0.0027 lower than that of the original Oil.

Preserve in completely filled, well-stoppered, amber-colored bottles, in a cool place, protected from light.

Oil of Lemon which has a terebinthinate odor must not be used or dispensed.

AVERAGE DOSE: Metric, 0.1 cc.—Apothecaries, 1½ minims.

Oleum Menthæ Piperitæ.—The optical rotation range now reads: "varies between 18° and 32° in a 100-mm. tube at 25° C."

The following test has been added:

> "Mix in a dry test-tube 3 drops of Oil of Peppermint with 5 cc. of a solution of 1 volume of nitric acid in 300 volumes of glacial acetic acid, and place the tube in a beaker of boiling water. In from one to five minutes a blue color develops which, on continued heating, deepens and shows a copper-colored fluorescence, and then fades, leaving a golden-yellow solution (distinction from oil of *mentha arvensis*)."

In drying the oily layer during the assay for total menthol, anhydrous sodium sulfate has been substituted for fused calcium chloride.

Oleum Menthæ Viridis.—The carvone requirement has been increased from 43 per cent to 50 per cent, with a corresponding change in the assay. The optical activity now reads "varies from −48° to −59° in a 100-mm. tube at 25° C."

The solubility requirement now reads: "A solution of the recently distilled oil in an equal volume of 80 per cent alcohol is neutral or only slightly acid to moistened litmus paper," and "The oil is soluble in 1 volume of 80 per cent alcohol, by volume, forming a clear solution."

Oleum Myristicæ.—The optical rotation now reads: "varies from +10° to +30° in a 100-mm. tube at 25° C." The refractive index range has been changed to "1.4740 to 1.4880 at 20° C."

Oleum Pini Pumilionis.—The solubility test has been changed to read as follows: "The oil is soluble in 4.5 to 8 volumes of 90 per cent alcohol, by volume." The optical rotation requirement now reads: "varies from −5° to −12° in a 100-mm. tube at 25° C. The acidity test has been eliminated. It is now required that less than 10 per cent of the oil distils below 165° C."

Oleum Rosæ.—This is a new text as follows:

OLEUM ROSÆ

Oil of Rose

The volatile oil distilled from the fresh flowers of *Rosa gallica* L. and Rosa damascena Miller, and varieties of these species (Fam. *Compositæ*).

Description and physical properties. A colorless or yellow liquid having the characteristic odor and taste of rose.

Tests for identity and purity. Oil of Rose at 25° C. is a viscous liquid. Upon gradual cooling it changes to a translucent crystalline mass, which may be easily liquefied by warming.

Specific gravity: 0.848 to 0.863 at 30° C. compared with water at 15° C.

Optical rotation: varies from −1° to −4° in a 100-mm. tube at 25° C.

Refractive index: 1.457 to 1.463 at 30° C.

One cc. of Oil of Rose mixes with 1 cc. of chloroform without turbidity. Upon adding 20 cc. of 90 per cent alcohol by volume to this solution, the resulting liquid is neutral or faintly acid to moistened litmus paper and deposits a crystalline residue upon standing.

Storage.—Preserve Oil of Rose in well-stoppered, completely filled containers in a cool place and protected from light.

Oleum Rosmarini.—The optical rotation requirement now reads: "varies from −5° to +10° in a 100-mm. tube at 25° C." The refractive index range is now "1.4640 to 1.4760 at 20° C."

Oleum Santali.—The refractive index range is now "1.5000 to 1.5100 at 20° C., in a 100-mm. tube at 25° C."

Oleum Sassafras.—The optical rotation requirement now reads: "varies from +2° to +4° in a 100-mm. tube at 25° C."

Oleum Sinapis Volatile.—The following tests have been added:

"To 3 Gm. of the oil, gradually add 6 Gm. of sulphuric acid, meanwhile keeping the liquid cool. Upon subsequent agitation the mixture will evolve sulfur dioxide, but will remain of a light yellow color, while the pungent odor of the oil will entirely disappear."

"To 3 Gm. of the oil add 3 Gm. of alcohol in a small flask, and then add 6 Gm. of ammonia water. Upon warming to 50° C., the liquid will at first become clear and will then subsequently deposit crystals of thiosinamine."

UNITED STATES PHARMACOPŒIA.

ABSTRACT OF PROPOSED CHANGES WITH NEW STANDARDS AND DESCRIPTIONS.

ELEVENTH REVISION.

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PART IV—EXTRACTS, FLUIDEXTRACTS AND TINCTURES—SOLUTIONS, SPIRITS AND SYRUPS—CERATES, OINTMENTS AND MISCELLANEOUS GALENICALS.

The Pharmacopœial Convention of 1930 recommended that "abstracts of changes proposed for the U. S. P. XI and new standards and descriptions" be published before final adoption, that those who are not members of the Revision Committee may have an opportunity for comment and criticism.

In compliance with this recommendation, the following abstracts are submitted. The nomenclature and the exact wording does not necessarily represent that to be finally adopted.

Comments should be sent to the chairman of the Revision Committee.

E. FULLERTON COOK,
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Philadelphia, Pa.

Distilled Water.—Distilled water is now used in the Pharmacopœia in all formulas where water was formerly directed.

EXTRACTS, FLUIDEXTRACTS AND TINCTURES.

Only formulas and directions are considered here. Assays are reported elsewhere.

Extracta.—General chapter rewritten—extracts to be evaporated at not over 60° C.

Extractum Belladonnæ.—Maceration of drug for 16 instead of 48 hours. Evaporation under reduced pressure at not over 60° C.

Extractum Fellis Bovis.—Oxgall evaporated to 200 cc., 500 cc. alcohol added, stand 24 hours, decant, mix residue with 250 cc. alcohol, filter, wash filter with 250 cc. alcohol. Evaporate alcoholic liquids to dryness at 80° C.; add starch to make the extract weigh one-eighth the weight of the original Oxgall.

Extractum Glycyrrhizæ Purum.—Percolate is evaporated to one-half its volume by boiling under atmospheric pressure and final evaporation conducted on a water-bath.

Extractum Hyoscyami.—Same as for Extractum Belladonnæ.

Extractum Nucis Vomicæ.—First menstruum consists of 750 cc. alcohol, 10 cc. acetic acid, 240 cc. water. Second menstruum consists of alcohol 3 and water 1. Maceration 24 instead of 48 hours. Evaporated at not over 100° C.

Extractum Stramonii.—Same as for Extractum Belladonnæ.

Fluidextracta.—General chapter rewritten—evaporation to be made at not over 60° C. Dampened drug allowed to stand for 15 minutes instead of 6 hours.

Fluidextractum Belladonnæ Radicis.—Menstruum—alcohol 4, water 1.

Fluidextractum Cascaræ Sagradæ Aromaticum.—Formula changed to the following:

Cascara Sagrada	1000	Gm.
Magnesium Oxide	120	Gm.

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* Permission to reprint for purposes of comment can be had on application to the Chairman of the Board of Trustees, James H. Beal, Fort Walton, Fla.

Pure Extract of Glycyrrhiza	40	Gm.
Saccharin	2	Gm.
Oil of Anise	0.65	cc.
Oil of Coriander	0.15	cc.
Methyl Salicylate	0	cc.
Alcohol	200	cc.
Water, sufficient to make	1000	cc.

Evaporated at not over 100° C.

Fluidextractum Glycyrrhizæ.—Ammonia water is added to the percolate which is evaporated, by boiling, to 1500 cc. filtered, evaporated to 750 cc. and 250 cc. of alcohol added.

Fluidextractum Ipecacuanhæ.—Menstruum, alcohol 3, water 1. Maceration 72 hours. Percolate reduced, at 60° C., to 1000 cc., 2000 cc. water added, stand over night, filtered, evaporated to 600 cc. and 40 cc. of Hydrochloric Acid and 300 cc. of alcohol added.

Fluidextractum Zingiberis.—Official Ginger is now to be the Jamaica variety only. Menstruum alcohol 9, water 1. Maceration over night.

Opium Granulatum.—Dried at 98° C. Powder to pass through a number 16 sieve with not more than 10 per cent through a number 60 sieve.

Opium Pulveratum.—Dried at 98° C.

Tinctura Aconiti.—Menstruum alcohol 3, water 1. p_H adjusted to 3.0.

Tinctura Aurantii Amari.—Menstruum, alcohol 2, water 1. Macerate 12 to 16 hours.

Tinctura Belladonnæ.—Menstruum, alcohol 3, water 1.

Tinctura Cantharidis.—Glacial acetic acid increased to 100 cc. Macerated 4 days before percolating.

Tinctura Capsici.—Menstruum, alcohol 9, water 1. Macerate 3 hours.

Tinctura Cinchonæ Composita.—Menstruum—First—Alcohol 130 cc., diluted hydrochloric acid 15 cc., water 50 cc. Second—Alcohol 2, water 1. Percolate to 925 cc. and add 75 cc. of glycerin.

Tinctura Colchici.—Menstruum, alcohol 2, water 1.

Tinctura Digitalis.—The fat is not extracted from the drug for the new tincture. Formula and directions are otherwise the same.

Tinctura Gentianæ Composita.—Macerate 12 to 16 hours.

Tinctura Hyoscyami.—Menstruum, alcohol 3, water 1.

Tinctura Kino.—Strength raised to 20 per cent. Menstruum, alcohol 9, glycerin 1.

Tinctura Opii.—After exhausting the drug the percolate is evaporated to 400 cc., the concentrate boiled for 15 minutes and then allowed to stand over night. The next day it is heated to 80° C., the paraffin added and the heat increased until the paraffin melts. The mixture is then beaten thoroughly and cooled.

The paraffin is then removed, the liquid filtered, distilled water added to make 750 cc., then 188 cc. of alcohol. The liquid is now assayed and sufficient menstruum added to make each 100 cc. contain 1 Gm. of anhydrous morphine.

Tinctura Opii Camphorata.—Tincture of Opium (40 cc.) replaces Opium (4 Gm.).

Tinctura Stramonii.—Menstruum, alcohol 3, water 1.

Tinctura Veratri Viridis.—Menstruum, first alcohol 200 cc., hydrochloric acid 2 cc., then alcohol; p_H adjusted between 4 and 5.

SOLUTIONS, SPIRITS, SYRUPS.

Liquor Calcii Hydroxidi.—The solution is to be prepared from calcium hydroxide, 3 Gm. per 1000 cc. instead of calcium oxide.

Liquor Ferri Tersulphatis.—The formula and directions are omitted.

Liquor Iodi Mitis.—This is a new antiseptic for first-aid treatment of wounds.

LIQUOR IODI MITIS

Mild Solution of Iodine

Mild Solution of Iodine contains, in each 100 cc., not less than 1.8 Gm. and not more than 2.2 Gm. of I and not less than 2.1 Gm. and not more than 2.5 Gm. of NaI.

Iodine	**20 Gm.**
Sodium Iodide	**23 Gm.**
Diluted alcohol, a sufficient quantity, to make	**1000 cc.**

Dissolve the iodine and sodium iodide in a sufficient quantity of diluted alcohol to make the product measure 1000 cc.

Description and physical properties. A transparent liquid having a reddish brown color and the odor of iodine and of alcohol.

Test for identity. A drop of the Solution added to 1 cc. of starch T.S., diluted with 10 cc. of distilled water, produces a deep blue color.

Assay for sodium iodide. Proceed as directed for potassium iodide under *Liquor Iodi Aquosa.*

Assay for iodine. Proceed as directed under *Liquor Iodi Aquosa.*

Storage. Preserve Mild Solution of Iodine in glass bottles, closed with stoppers resistant to corrosion and in a cool place, protected from light.

Liquor Magnesii Citratis.—The formula of the U. S. P. IX which contained 33 Gm. of Citric Acid instead of the 35 Gm. of the U. S. P. X has been accepted and the following test for citric acid added:

Transfer exactly 10 cc. of Solution of Magnesium Citrate to a 250-cc. beaker. Gently agitate the contents for two minutes, then dilute with 30 cc. of distilled water. Add 3 drops of phenolphthalein T.S. and normal sodium hydroxide until a permanent pink color is just produced and then acidify with 4 drops of normal hydrochloric acid. Add 20 cc. of calcium chloride T.S. and concentrate, by boiling, to about 30 cc., stirring constantly with a rubber-tipped glass rod during the boiling. While hot, transfer the precipitate completely to a filter of from 9 to 11 cm. in diameter with the aid of small quantities of boiling distilled water. Then wash the precipitate five times with boiling distilled water. Collect the filtrate and washings in a 150-cc. beaker. Concentrate the filtrate and washings, by boiling, to about 20 cc. Add ammonia T.S., drop by drop, until a distinct red color is produced and then concentrate to about 10 cc. While hot, transfer the precipitate completely to a filter of from 7 to 9 cm. in diameter with the aid of small quantities of boiling distilled water and wash the precipitate six times with about 5 cc. of boiling distilled water.

Dry the two filters with the precipitates and incinerate them together in a loosely covered platinum crucible, heating at first at a low temperature until the precipitates are well charred and then removing the cover and raising the temperature until the residue is practically white. If a gas flame is used it must not come in contact with the mass in the crucible. Cool, place the crucible with its contents in a suitable beaker, add about 30 cc. of distilled water, and then exactly 50 cc. of half-normal hydrochloric acid. When the residue has dissolved remove the crucible, rinsing it well with distilled water into the beaker. Add about 100 cc. of distilled water, cover the beaker with a watch glass and boil gently for about ten minutes. Cool and titrate the excess of acid with half-normal sodium hydroxide, using phenolphthalein T.S. as the indicator. Not less than 26 cc. of half-normal hydrochloric acid is consumed.

Liquor Potasii Arsenitis.—The formula is changed to:

Arsenic Trioxide	10 Gm.
Potassium Bicarbonate	7.6 Gm.
Alcohol	30 cc.
Distilled water to make	1000 cc.

The preparation is without color and is not excessively alkaline.

Liquor Sodii Hypochloritis.—This is a new text. It is a solution containing 4 per cent of NaOCl. There is no formula.

Liquor Sodii Hypochloritis Chirurgicalis.—The formula is changed to:

Solution of Sodium Hypochlorite	1000 cc.
Sodium Bicarbonate	
Distilled Water, of each, to make	6000 cc.

Spiritus Anisi.—The following rubric and assay have been added.

Each 100 cc. shall contain not less than 9 cc. and not more than 11 cc. of Oil of Anise.

Assay. Transfer exactly 5 cc. of the Spirit to a Babcock flask. Attach the bottle to a suction pump and, while maintaining a relatively high degree of vacuum, evaporate most of the alcohol by repeatedly but carefully immersing the bottle in hot water and immediately withdrawing it. Throughout the operation the flask must be vigorously rotated. Care must be taken that none of the liquid be drawn out of the flask. When the most of the alcohol has been removed, cool the liquid and add exactly 1 cc. of kerosene from a pipette calibrated to deliver that amount and mix well. Then add sufficient saturated calcium chloride solution, acidified with hydrochloric acid, to almost fill the bulb of the flask. Rotate the flask vigorously to insure thorough mixing, then add sufficient of the calcium chloride solution to bring the separated oil into the neck of the flask. Centrifuge for five minutes and then read the volume of oil in the stem. Subtract 5 divisions for the kerosene added and multiply the remaining volume by 4.2 to obtain the percentage of oil, by volume, in the Spirit.

Spiritus Aurantii Compositus.—The following rubric and assay have been added.

Each 100 cc. shall contain not less than 25 cc. and not more than 30 cc. of mixed Oils.

Assay. Transfer exactly 2 cc. of the Spirit to a Babcock flask, add exactly 1 cc. of kerosene from a pipette calibrated to deliver that amount and mix well. Then add sufficient saturated calcium chloride solution, acidified with hydrochloric acid, to almost fill the bulb of the flask. Rotate the flask vigorously to insure thorough mixing, then add sufficient of the calcium chloride solution to bring the separated oil into the neck of the flask. Centrifuge for five minutes and then read the volume of oil in the stem. Subtract 5 divisions for the kerosene added and multiply the remaining volume by 10.5 to obtain the percentage of oil, by volume, in the Spirit.

Spiritus Cinnamomi.—The following rubric and assay have been added.

Each 100 cc. shall contain not less than 9 cc. and not more than 11 cc. of Oil of Cinnamon. For the assay see Spiritus Anisi.

Spiritus Lavandulæ.—The following rubric and assay have been added.

Each 100 cc. shall contain not less than 4 cc. and not more than 6 cc. of Oil of Lavender.

Assay. Transfer exactly 10 cc. of the Spirit into a Babcock flask, add exactly 1 cc. of kerosene from a pipette calibrated to deliver that amount and mix well. Then add sufficient saturated calcium chloride solution, acidified with hydrochloric acid, to almost fill the bulb of the flask. Rotate the flask vigorously to insure thorough mixing, then add sufficient of the calcium chloride solution to bring the separated oil into the neck of the flask. Centrifuge for five minutes and then read the volume of oil in the stem. Subtract 5 divisions for the kerosene added and multiply the remaining volume by 2.2 to obtain the percentage of oil by volume.

Spiritus Menthæ Piperitæ.—

The leaves are macerated with 900 cc. of alcohol instead of 800 cc. and the oil is added after the mixture is filtered.

The following rubric and assay have been added. Each 100 cc. shall contain not less than 9 cc. and not more than 11 cc. of Oil of Peppermint.

Assay. Follow assay methods as given under Spiritus Aurantii Compositus, except the factor for multiplying the "remaining volume" is 4.2.

Spiritus Menthæ Viridis.—The following rubric and assay have been added.

The leaves are macerated with 900 cc. of alcohol instead of 800 cc. and the oil is added after the mixture is filtered.

Each 100 cc. shall contain not less than 9 cc. and not more than 11 cc. of Oil of Spearmint.

Assay. Follow assay methods as given under Spiritus Aurantii Compositus, except the factor for multiplying the "remaining volume" is 4.2.

Syrupus Pruni Virginianæ.—The drug is macerated for 1 hour, the percolation is allowed to proceed rapidly and 20 cc. of alcohol is added to the preparation. An alternative method for dissolving the sugar by percolation is added.

OINTMENTS AND MISCELLANEOUS GALENICALS.

Emplastrum Adhesivum.—The tension test is omitted. 100 sq. cm. of plaster to contain at least 1.5 Gm. of plaster mass. Zinc oxide, if used, reduced from 20 per cent to 15 per cent.

Emplastrum Belladonnæ.—100 sq. cm. of plaster to contain at least 2.5 Gm. of the belladonna plaster mass consisting of adhesive plaster and an extract of belladonna root.

Emulsum Petrolati Liquidi.—This is a new text as follows:

EMULSUM PETROLATI LIQUIDI.

Emulsion of Liquid Petrolatum.

Emuls. Petrolat. Liq.

Liquid Petrolatum	**500**	**cc.**
Acacia, in very fine powder	**125**	**Gm.**
Syrup	**100**	**cc.**
Vanillin	**0.035**	**Gm.**
Alcohol	**60**	**cc.**
Distilled Water, a sufficient quantity, to make	**1000**	**cc.**

Mix the liquid petrolatum with the powdered acacia in a dry mortar, add 250 cc. of distilled water all at once and emulsify the mixture. Then add, in divided portions and triturating after each addition, a mixture of the syrup, 50 cc. of distilled water and the vanillin, dissolved in the alcohol. Finally add sufficient distilled water to make the product measure 1000 cc.

NOTE: In preparing Emulsion of Liquid Petrolatum other methods of emulsification may be used and the quantity of acacia may be reduced or it may be replaced by agar, gelatin, tragacanth or mixtures of any of these emulsifying agents, provided the resulting emulsion is similar in viscosity and appearance to the emulsion made by the formula suggested above.

AVERAGE DOSE: Metric, 30 cc.—Apothecaries, 1 fluidounce.

Emulsum Olei Morrhuæ.—No change except that other emulsifying agents may be employed if the resulting product retains the characteristics of the emulsion prepared by the formula given.

Glyceritum Acidi Tannici.—Directions changed so that the tannic acid and the sodium citrate are first rubbed up with part of the glycerin, then the balance of the glycerin is added and the mixture is heated on a sand bath until solution results.

Infusa.—The 50-Gm. portion of drug is moistened with 50 cc. of cold distilled water, in a suitable vessel, preferably earthenware, and allowed to stand for 15 minutes. Then 900 cc. of boiling distilled water is poured upon it, the vessel covered, and the drug macerated for a half hour. It is then strained and distilled water added to make 1000 cc.

Linimentum Camphoræ.—The following assay has been adopted:

Assay. Place approximately 5 cc. of Camphor Liniment in a dried and weighed 120-cc. Erlenmeyer flask and weigh accurately. Connect the flask with a U-shaped drying tube, place the flask and tube in an air oven maintained at 110° C. and pass a rapid stream of carbon dioxide through the U-tube into the flask for two hours. The orifice of the gas delivery tube should be about 15 mm. above the surface of the Liniment. Remove the flask and Liniment, blow out the remaining carbon dioxide with dry air, cool the flask in a desiccator and weigh. The loss in weight is not less than 19 per cent and not more than 21 per cent of the weight of Camphor Liniment taken for the assay.

Linimentum Chloroformi.—An assay has been added:

Assay. Place 50 cc. of alcohol in a 100-cc. volumetric flask, and measure exactly 10 cc. of Chloroform Liniment at 25° C. into the flask by means of a pipette, placing the tip of the pipette just beneath the surface of the alcohol. Make up a volume of 100 cc. at 25° C. with alcohol and mix thoroughly. By means of the same pipette transfer 10 cc. of the alcoholic solution to a hard glass test-tube of 25 mm. by 200 mm. internal dimensions and containing a cooled mixture of 20 cc. of distilled water and 5 cc. of sulfuric acid. Connect the tube by means of a tin-foil-covered stopper with a well-cooled condenser, the delivery tube of which dips beneath the surface of 50 cc. of an alcoholic solution of potassium hydroxide (3 in 10) contained in a 300-cc. flask, and heat gently until about 10 cc. of distillate has been received. Then withdraw the delivery tube, rinse it with 5 cc. of alcohol, and proceed as directed in the assay under *Spiritus Chloroformi*, beginning with the words "Connect the flask by means of a tin-foil-covered stopper." Each cc. of tenth-normal silver nitrate is equivalent to 0.00398 Gm. of $CHCl_3$.

Massa Hydrargyri.—Honey replaces Honey of Rose.

Mistura Cretæ.—U. S. P. IX formula again accepted.

Compound Chalk Powder	20 Gm.
Cinnamon Water	40 cc.
Water, to make	100 cc.

Mucilago Acaciæ.—An alternative formula is added permitting it to be made extemporaneously from powdered acacia, the usual practice in prescription filling.

Pilulæ Ferri Carbonatis.—The use of water has been eliminated from the original mixture.

Suppositoria Glycerini.—The formula has been changed as follows:

Glycerin	**92 Gm.**
Sodium Stearate	**8 Gm.**
Distilled Water	**5 Gm.**
To make about	**30 rectal suppositories**

Heat the glycerin in a porcelain dish, on a water-bath, to about 95° C., add the sodium stearate and stir the mixture gently with a glass rod, retaining the specified temperature, until the sodium stearate is dissolved. Then add the distilled water, mix thoroughly, and immediately pour the hot liquid into suitable moulds. Remove the suppositories when they are completely cold and preserve them in tightly stoppered glass containers in a cool place.

NOTE: If preferred the sodium stearate for Suppositories of Glycerin may be prepared during the making of the Suppositories by the direct reaction between stearic acid and sodium carbonate or sodium hydroxide, these being taken in correct proportion.

Toxitabellæ Hydrargyri Chloridi Corrosivi.—Two sizes of tablets are recognized.

Small, to contain from 0.1125 to 0.1375 Gm. of $HgCl_2$.

Large, to contain from 0.45 to 0.55 Gm. of $HgCl_2$.

The tablets are to be of a distinctive color, not white; angular or irregular shape, not discoid; if for household use they are to be dispensed in glass containers of a distinctive angular shape having irregular or roughened sides or edges; red poison label on each package and also statement indicating the amount of mercury bichloride in each tablet.

Ointments.—The following statement concerning Ointments is proposed for inclusion in the "Introductory Notices" of the new Pharmacopœia:

> "In the official ointments containing yellow or white wax or paraffin, as stiffening agents, the proportions of these and of the other fatty substances directed in the official formulas may be varied to maintain a suitable consistence under different climatic conditions, provided that the ratio of active ingredients to the total weight of the ointment remains the same and that the essential nature of the fatty vehicle is not materially changed."

Unguentum.—Formula changed to:

Wool Fat	5 Gm.
White Wax	5 Gm.
White Petrolatum	90 Gm.
To make	100 Gm.

Unguentum Acidi Borici.—Formula changed and assay added:

Boric Acid	10 Gm.
White Wax	5 Gm.
Wool Fat	5 Gm.
White Petrolatum	80 Gm.
To make	100 Gm.

To contain not less than 9 per cent and not more than 11 per cent of H_3BO_3.

Assay. Place about 5 Gm. of Boric Acid Ointment in a tared Erlenmeyer flask of suitable capacity and weigh accurately. Add about 30 cc. of hot distilled water and heat for fifteen minutes on a water-bath with frequent agitation. Filter while hot through a wetted filter into a 100-cc. volumetric flask. Wash the flask several times with hot distilled water transferring the washings to the filter. When cool, dilute the filtrate to exactly 100 cc. To exactly 20 cc. of the filtrate, representing one-fifth of the weight of Boric Acid Ointment taken, add 20 cc. of glycerin, previously neutralized to phenolphthalein T.S. Titrate with tenth-normal sodium hydroxide, using phenolphthalein T.S. as the indicator. Discharge the pink color by the addition

of 20 cc. of glycerin, neutral to phenolphthalein T.S. and again titrate until the pink color reappears. Each cc. of tenth-normal sodium hydroxide is equivalent to 0.006192 Gm. of H_3BO_3.

Unguentum Acidi Tannici.—Formula changed to:

Tannic Acid	20 Gm.
Glycerin	20 Gm.
Wool Fat	3 Gm.
Yellow Wax	3 Gm.
Petrolatum	54 Gm.
To make	100 Gm.

Unguentum Aquæ Rosæ.—The stronger rose water is replaced with 50 cc. of rose water, 140 cc. of distilled water and 0.2 cc. of oil of rose. The ointment is to be preserved in pure tin collapsible tubes.

Unguentum Belladonnæ.—Formula changed to:

Pilular Extract of Belladonna	10 Gm.
Diluted Alcohol	5 cc.
Wool Fat	5 Gm.
Yellow Wax	5 Gm.
Petrolatum	75 Gm.
To make	100 Gm.

A new rubric and assay appear elsewhere.

Unguentum Chrysarobini.—Formula changed to:

Chrysarobin	6 Gm.
Wool Fat	5 Gm.
Yellow Wax	5 Gm.
Chloroform	4 Gm.
Liquid Petrolatum	6 Gm.
Petrolatum	74 Gm.
To make	100 Gm.

Unguentum Gallæ.—Formula changed to:

Nutgall	20 Gm.
Yellow Wax	5 Gm.
Wool Fat	5 Gm.
Petrolatum	70 Gm.
To make	100 Gm.

Unguentum Hydrargyri Ammoniati.—Formula changed and assay added.

Ammoniated Mercury	10 Gm.
White Wax	5 Gm.
Wool Fat	5 Gm.
White Petrolatum	80 Gm.
To make	100 Gm.

Ammoniated Mercury Ointment contains an amount of ammoniated Mercury corresponding to not less than 7.1 per cent and not more than 8.7 per cent of Hg.

Assay. Place in a separator about 1.5 Gm. of Ammoniated Mercury Ointment accurately weighed. Warm it slightly to soften the ointment and while rotating add 50 cc. of ether and then shake the mixture until the ointment base is dissolved. Add 10 cc. of a mixture of equal volumes of hydrochloric acid and distilled water and shake it vigorously until all of the Ammoniated Mercury has dissolved. Filter the aqueous layer that separates into a 250-cc. beaker and wash the remaining ethereal solution with several portions of 10 cc. each of distilled water until the washings produce no turbidity with silver nitrate T.S.

Dilute the hydrochloric acid solution and the combined washings to about 150 cc. and add 5 cc. of hydrochloric acid. Saturate the solution with hydrogen sulfide gas and collect the precipitate in a tared Gooch crucible. Wash the precipitate successively with distilled water, with two 10-cc. portions of alcohol, two 10-cc. portions of carbon tetrachloride, using no suction, and finally wash with 10 cc. of ether. Dry the crucible and contents to constant weight at 100° C. The weight of mercuric sulfide obtained, multiplied by 0.862 indicates the quantity of mercury represented by the ammoniated mercury in the Ointment taken for the assay.

Unguentum Hydrargyri Fortius.—Formula changed:

Mercury	500 Gm.
Oleate of Mercury	20 Gm.
Wool Fat	300 Gm.
White Wax	50 Gm.
Petrolatum	130 Gm.
To make	1000 Gm.

Unguentum Hydrargyri Mite.—Formula changed to:

Strong Mercurial Ointment	600 Gm.
White Petrolatum	380 Gm.
White Wax	20 Gm.
To make	1000 Gm.

Unguentum Hydrargyri Oxidi Flavi.—Formula changed and assay added.

Yellow Mercuric Oxide	1 Gm.
Liquid Petrolatum	1 Gm.
Yellow Wax	5 Gm.
Wool Fat	5 Gm.
Petrolatum	88 Gm.
To make	100 Gm.

Yellow Mercuric Oxide Ointment contains not less than 0.9 per cent and not more than 1.1 per cent of HgO.

Assay. Place in a separator about 10 Gm. of Ointment of Yellow Mercuric Oxide, accurately weighed. Warm it slightly to soften the ointment and while rotating add 50 cc. of ether. Shake the mixture until the soluble portion is dissolved. Add 10 cc. of a mixture of equal volumes of hydrochloric acid and distilled water and shake it vigorously until the mercuric oxide has dissolved. Filter the aqueous layer that separates into a 250-cc. beaker and wash the remaining ethereal solution with several portions of 10 cc. each of distilled water until the washings produce no turbidity with silver nitrate T.S. Dilute the hydrochloric acid solution and the combined washings with distilled water to about 150 cc. and add 5 cc. of hydrochloric acid. Saturate the solution with hydrogen sulfide gas and collect the precipitate in a tared Gooch crucible. Wash the precipitate successively with distilled water, two 10-cc. portions of alcohol, two 10-cc. portions of carbon tetrachloride, without suction and finally with 10 cc. of ether. Dry the crucible and contents to constant weight at 100° C. The weight of mercuric sulfide obtained, multiplied by 0.931, indicates the quantity of mercuric oxide in the Ointment taken for the assay.

Unguentum Iodi.—Formula changed and assay added.

Wool Fat, changed to	5 Gm.
Yellow Wax	5 Gm. added
Petrolatum	70 Gm. added

Iodine Ointment contains not less than 6.5 per cent and not more than 7.5 per cent of total I.

Assay. Tare a nickel or silver crucible containing about 2 Gm. of anhydrous potassium carbonate, add about 1 Gm. of Iodine Ointment and reweigh. Cover the Ointment with an additional 2 Gm. of potassium carbonate and heat on a water-bath until the Ointment is fluid. Heat the crucible and contents gently over a Bunsen flame, gradually increasing the temperature,

but not exceeding a dull redness, until the Ointment is completely carbonized. Extract the residue with boiling distilled water and wash on a filter until the washings no longer produce a precipitate with silver nitrate T.S. after acidifying with nitric acid. Heat the combined filtrate and washings, which measure about 75 cc., on a water-bath, and add potassium permanganate T.S. until the hot liquid remains permanently pink. Add just enough alcohol to remove the pink tint, cool to 25° C., then add sufficient distilled water to make exactly 100 cc. Filter the mixture through a filter which has not been previously moistened, rejecting the first 25 cc. of filtrate. To 50 cc. of the subsequent clear filtrate add 10 cc. sodium potassium iodide T.S., acidify with diluted sulfuric acid and titrate with tenth-normal sodium thiosulfate. Each cc. of tenth-normal sodium thiosulfate is equivalent to 0.002115 Gm. of iodine.

Unguentum Phenolis.—Assay added.

Phenol Ointment contains not less than 1.8 per cent and not more than 2.2 per cent of C_6H_5OH.

Assay. Place about 2 Gm. of Phenol Ointment in a tared 150-cc. Florence flask and weigh accurately. Add 75 cc. of distilled water and arrange the flask for steam distillation having connected it with a water-chilled condenser. Distil with steam, collecting 150 cc. of distillate in a 500-cc. glass-stoppered flask: 1 cc. of the subsequent distillate should show no turbidity with 3 cc. of bromine T.S. Add exactly 50 cc. of tenth-normal bromine and proceed with the assay as directed under *Phenol*, line beginning with the words," then 5 cc." Each cc. of tenth-normal bromine is equivalent to 0.001568 Gm. of C_6H_5OH.

Unguentum Sulphuris.—Formula changed and assay added.

Precipitated Sulfur	15 Gm.
Wool Fat	5 Gm.
Yellow Wax	5 Gm.
White Petrolatum	75 Gm.
To make	100 Gm.

Sulfur Ointment contains not less than 13.5 and not more than 16.5 per cent of S.

Assay. Place about 0.5 Gm. of Sulfur Ointment in a tared Erlenmeyer flask of suitable capacity and weigh accurately. Add 5 cc. of nitric acid and 3 cc. of bromine. Heat the mixture gently until the excess of bromine has been dissipated. Add about 50 cc. of distilled water and transfer to a separator. Extract the liquid with three successive portions of ether of 30, 20 and 10 cc., respectively, to remove the soluble ingredients. Wash the combined ethereal washings with about 10 cc. of distilled water and add this to the aqueous solution. Dilute the solution to about 200 cc. with distilled water and acidify with hydrochloric acid. Heat the mixture to boiling and add hot barium chloride T.S. in small portions, until no further precipitation takes place. Heat the mixture on a water-bath for thirty minutes, collect the precipitate on a filter, wash, dry, ignite and weigh it as barium sulfate. The weight of barium sulfate thus obtained, multiplied by 0.1373, indicates its equivalent of S.

Unguentum Zinci Oxidi.—Formula changed and assay added.

Zinc Oxide	20 Gm.
Liquid Petrolatum	10 Gm.
White Wax	5 Gm.
Wool Fat	5 Gm.
White Petrolatum	60 Gm.
To make	100 Gm.

Zinc Oxide Ointment contains not less than 19 per cent and not more than 21 per cent of ZnO.

Assay. Weigh accurately in a tared porcelain dish about 2 Gm. of Zinc Oxide Ointment, heat it slowly until melted and continue the heating, gradually raising the temperature until the mass is thoroughly charred. Cool, break up the charred mass with a stout glass rod, add 10 cc. of distilled water and 5 cc. hydrochloric acid and heat on the water-bath for one-half hour. Filter and wash the filter thoroughly with distilled water. Dilute the filtrate to 150 cc., add ammonia T.S. until the precipitate first formed is redissolved and then pass hydrogen sulfide through the

mixture until the zinc is completely precipitated. After allowing it to stand for about one hour, filter the precipitated zinc sulfide and wash it a few times with water containing a little ammonium sulfide. Dissolve the precipitate of zinc sulfide from the filter by pouring over the edges of the filter hot diluted hydrochloric acid in small portions at a time. Wash the filter thoroughly with small quantities of hot distilled water, receiving the filtrate and washings in a tared porcelain dish. Evaporate the filtrate on the water-bath to about 2 cc. then add to it 3 Gm. of yellow mercuric oxide, previously mixed with about 15 cc. of distilled water. Evaporate the mixture to dryness and carefully ignite the residue under a hood to constant weight. The weight of the zinc oxide thus obtained, corrected for any non-volatile matter contained in 3 Gm. of the mercuric oxide, corresponds to not less than 19 per cent and to not more than 21 per cent of the weight of the Ointment taken for the assay.

REPORT ON THE UNITED STATES PHARMACOPŒIA, ELEVENTH REVISION.*

BY E. FULLERTON COOK, CHAIRMAN OF THE U. S. PHARMACOPŒIA COMMITTEE, ELEVENTH REVISION.

The work of revision upon the U. S. P. XI of necessity must soon come to a conclusion if the new Pharmacopœia is to appear within a reasonable time. The galley proofs, after an exacting review by the members of the Revision Committee, and the insertion of many alterations, have been sent back to the printer for issuance as page proof. While it will be necessary to make a few additional changes, these cannot be of a drastic character, since page proof, when once made up, does not permit of extensive revision.

This means that admissions and deletions are settled for this printing, although the Convention has authorized the admission of new titles, should this prove desirable, through the issuance of "Supplements."

The question of "Scope" always will be one of the major problems of the Revision. Members of the Sub-Committee responsible for these decisions have most earnestly and conscientiously studied this problem. Their deliberations cover about 500 pages of Bulletins, and, in a number of instances, they have called for information and advice from the Sub-Committee on Therapeutics, in which Committee's Bulletins will be found many more pages of discussion.

The Sub-Committee on Scope has proceeded on well-defined principles. Its objective has been to include as official in the Pharmacopœia, a comprehensive and dependable list of therapeutic agents meeting most of the needs of the medical profession. Insulin will be a striking example of omission, for, though approved, it could not be admitted due to its control by patent. As soon as this expires, it will promptly be admitted by the Supplement route.

The newly admitted substances are as follows:

ARTICLES ADDED TO THE U. S. P. XI.

Acriflavina
Acriflavinæ Hydrochloridum
Æthylenum
Æthylhydrocuprinæ Hydrochloridum
Æthylis Oxidum
Antitoxinum Scarlatinæ Streptococcicum
Bismuthi et Potassii Tartras
Calcii Creosotas
Calcii Gluconas
Calcii Hydroxidum
Carbo Activatus
Carbonii Dioxidum
Chlorobutanol
Digitalis Pulverata
Emulsum Petrolati Liquidum
Ephedrina
Ephedrinæ Hydrochloridum
Ephedrinæ Sulfas
Erythrol Tetranitrate
Extractum Hepatis
Ferri et Ammonii Citrates Virides
Fluoresceinum Solubile
Histaminæ Phosphas
Hydrargyri Succinimidum
Iodophthaleinum Solubile
Liquor Ergosterolis Irradiati
Liquor Hepatis
Liquor Hepatis Purificatus
Liquor Histaminæ Phosphatis
Liquor Parathyroidei

* Read at the 1935, A. PH. A. meeting, Portland, Oregon.

Liquor Sodii Hypochloritis
Merbaphenum
Neocinchophenum
Oleum Iodatum
Oleum Maydis
Oleum Morrhuæ Non-Destearinatum
Oleum Rosæ
Phenacainæ Hydrochloridum
Phenobarbitalum Solubile
Pulvis Chiniofoni
Serum Antimeningococcicum
Serum Antipneumococcicum
Sodii Perboras
Sodii Stearas
Stomachus
Tabellæ Glycerylis Trinitratis
Theophyllina cum Æthylenediamina
Theophyllina et Sodii Acetas
Tinctura Iodi Mitis
Toxinum Diphthericum Detoxificatum
Toxinum Diphthericum Diagnosticum
Toxinum Scarlatinæ Streptococcicum
Toxitabellæ Hydrargyri Bichloridi Parvæ
Tryparsamidum
Tuberculinum Pristinum
Vaccinum Rabies
Vaccinum Typhosum
Vaccinum Typhosum Paratyphosum

Interim Revisions.—There has been an increasing recognition within the past few years that decennial revisions were not adequate for official standards; that the U. S. P. policy of a ten-year change in the official requirements and scope greatly lessened the usefulness of the Pharmacopœia, and, in fact, established some standards which soon became inaccurate or incapable of enforcement due to advances in scientific knowledge.

This was strikingly true of products standardized by biological methods in which field tremendous strides were being made, but other influences such as new legislation, increased Governmental enforcement, and the introduction of new therapeutic agents all combined to force the issuance of supplements which became known as "Interim Revision Announcements."

There can be little doubt that if the Pharmacopœia of the future is adequately to serve the medical and pharmaceutical professions and to provide correct standards for governmental enforcement, that this policy will have to be continued and perhaps extended. One suggestion has been the issuance of an "annual supplement" but only time can determine the form which added titles and revised standards shall take to most effectively meet the changing and developing need for standards in medicinal products.

Fortunately the authority has been provided and the Revision Committee was prepared to meet the unusual situations of the past two years and thus prove that the revision machinery was sufficiently flexible and fully qualified to meet these new problems as they have arisen.

Vitamin and Anti-anemia Advisory Boards.—Among recent problems has been the necessity for the Pharmacopœia to assist in establishing standards for important new medicinal products. Here again the unique position of the Pharmacopœia has been demonstrated.

In the field of vitamins, the Committee by investigation has been able to bring into conference outstanding specialists in this field. The group includes those dealing with the subject as a pure science, mostly in University or Scientific Research, then the experts in Government laboratories, and, in addition, the technical experts associated with commercial organizations.

This group, coming together under Pharmacopœial auspices, sitting about one table, with their discussions reported in full and published, made it possible to establish a balanced judgment, eliminate special interests and reach wise decisions which ultimately were reflected in new U. S. P. standards for Cod Liver Oil.

To direct this program, the U. S. P. Vitamin Advisory Board has been established, having as members Doctors Mendel, Sherman and Nelson and a representative of the U. S. P. Board of Trustees and of the Committee of Revision. This Board is now directing an extensive study, with 26 laboratories participating, into methods of assaying vitamin B_1. A recent necessity for pharmacopœial standardization has been the newly admitted preparations for the treatment of pernicious anemia. To meet this need a new Board of experts in this field is being established. This Board will announce methods of assay and will evaluate clinical reports upon products which have been given official recognition.

Reference Standards.—It has become necessary for pharmacopœial authorities to establish and distribute certain reference standards for use as a basis of comparison in assays. This becomes a new function for the Pharmacopœia, although a similar service was rendered by the Food and Drug Administration during the past decade.

Among the reference standards will be the "Reference Cod Liver Oil" of known vitamin A and vitamin D potency, expressed in U. S. P. vitamin units; a "Reference Digitalis Powder" of known activity, expressed in terms of U. S. P. digitalis units; a "Reference Pepsin," having a proteolitic activity equivalent to 3000 times its weight of egg albumen; also the standard for Ergot, Ergotoxine Ethanesulfonate and perhaps several others.

Digitalis.—As already indicated, the potency of this drug and the two official preparations, the "Standardized Powder" and the "Tincture," will be expressed in terms of U. S. P. digitalis units. This U. S. P. unit is identical in potency with the International Digitalis Unit which is the activity of 0.1 Gm. of the International Standard Digitalis Powder. The potency of the official digitalis leaf shall be such that 0.1 Gm. shall possess an activity equivalent to not less than 1 U. S. P. digitalis unit.

Under the title for this drug will be found the statement "When digitalis is prescribed, 'Digitalis Pulverata' is to be dispensed." Under the title "Digitalis Pulverata" or "Powdered Digitalis" it is required that 0.1 Gm. shall possess an activity equivalent to not less than 1 and not more than 1.1 U. S. P. digitalis units, when assayed as directed under the Tincture.

In the Tincture of Digitalis the potency of 1 cc. is to be the equivalent of not less than 1 and not more than 1.1 U. S. P. digitalis units, in other words one-tenth of the strength of the powdered drug. And here will be found the details of the assay which retains the one-hour frog method. While a 10 per cent range of potency is indicated in the statement of standards, in both the powder and the tincture, at the end of the assay a tolerance is provided which states that owing to many variable factors in the assay which makes it difficult for different operators to obtain identical results, evidences of potency within 20 per cent above or 20 per cent below the standard are accepted.

The frog method of assay has been retained, since the Sub-Committee was not convinced of the superiority of any other method. An extensive investigation has been started, however, with clinical coöperation and to be participated in by the British Pharmacopœial Commission, in which a number of methods of assay will be compared on preparations distributed by the pharmacopœial committee and the investigation will include a comparison of the various assay methods and clinical results from the use of digitalis preparations which have been aged. When this study is completed it is expected that we shall have reliable evidence on many of the controversial points in digitalis assay.

Ergot.—Here again uncertainty prevails, notwithstanding the recent extensive studies concerning ergot constituents. Apparently no better assay than the cockscomb method, for determining the fact that the Fluidextract is potent, has been presented, at least the present state of knowledge is such that the question is still in flux. The Fluidextract, however, is to be prepared from drug of prime quality, by the Type C Method, without heat, and 1000 cc. is to be made from 1000 Gm. of drug. There is to be no subsequent adjustment of volume but the product must have a known minimum potency, per cubic centimeter, equivalent to that of not less than 0.5 mg. of ergotoxine ethanesulfonate—but no upper limit.

Should a Fluidextract fail to meet this standard it would indicate a product which was not official even though it could be shown to possess some potency by another type of assay but which probably evaluated a different constituent.

Sulfur vs. Sulphur.—"Sulfur" or words derived from sulfur, such as sulfite, sulfate, thiosulfate, etc., all will be spelled with an "f" in place of the "ph" in the new Pharmacopœia.

Tincture of Ginger.—Only recently it has been found practically necessary to omit Tincture of Ginger from the Pharmacopœia. This is due to the action by the Internal Revenue Bureau which places it in the same status as alcoholic liquors. As now regulated, this tincture can be prepared only by one holding a permit to make it and having a rectifier's license. It could then be sold and kept only in the original container which had the license number of the rectifier blown in the glass of the bottle.

Inasmuch as no rectifier has taken out a license to manufacture it, there is no legal Tincture of Ginger available to-day in the United States. Anyone having it in stock or making it by the official method is subject to severe penalties.

The Fluidextract will be retained and is directed in the formula for Aromatic Sulfuric Acid and will be available for therapeutic use when needed.

Distilled Water.—"Distilled Water" has replaced "Water" in the formulas of the Pharma-

copœia. This is in conformity with the practice of practically all pharmacopœias of the world and was adopted only after a wide survey of the water supplies in many parts of the country indicated that the available water in many communities was unfit for use in medicinal products. This fact, of course, had been generally recognized and careful pharmacists and manufacturing pharmacists have long been using nothing but distilled water in medicinal solutions and preparations.

Activated Charcoal.—U. S. P. X Wood Charcoal is being replaced by an "Activated Charcoal" which is required by test to have adsorbent qualities of a high order to insure superior therapeutic efficiency. By one test a methylene blue solution must be decolorized, by another test strychnine sulfate is adsorbed from solution while by a third test hydrogen sulfide gas is adsorbed. The U. S. P. will state that when Carbo Ligni is prescribed Carbo Activatus may be dispensed.

Solution of Potassium Arsenite.—Fowler's Solution has been modified so as to have only a slight alkalinity and the Compound Tincture of Lavender has been replaced by alcohol, thus making a colorless solution. This simplification of the formula is in harmony with scientific improvement. The old solution was simply an imitation of one of the oldest known proprietary medicines. The pharmacist and the doctor must, however, know of changes of this type as soon as possible.

Solution of Sodium Hypochlorite (4 Per Cent).—This solution has replaced Chlorinated Lime in the preparation of Dakin's Solution and also can be used advantageously as a disinfectant and deodorant in those cases where chlorinated lime was formerly employed.

A solution of this type is now widely used in the home and is readily available at small cost but usually under a trade-marked name. It should now be made available under the official title.

Solution of Magnesium Citrate.—The U. S. P. IX formula has been adopted with 33 Gm. of citric acid instead of 35 Gm. This reduction in acid is satisfactory when the Magnesium Carbonate used does not contain the equivalent of Magnesium Oxide in the maximum amount permitted. In fact, precipitation on long standing will occur unless the oxide equivalent is controlled at the lower limit. A note is introduced suggesting that for greater stability the amount of Magnesium Carbonate taken shall be the equivalent of 15 Gm. of 39.2 per cent oxide. If the oxide equivalent of the carbonate is stated on the package, this adjustment is readily possible. Sterilization is also suggested as a means of improving the stability of the solution.

Variations Permitted.—The new Pharmacopœia will specifically authorize variations in a few products. A blanket clause provides for the increase or decrease in the degree of consistence in ointments, but without altering the character or percentage of medication or the nature of the fatty vehicle. This is to meet varying climatic conditions.

In the Emulsions of Cod Liver Oil and of Liquid Petrolatum, other emulsifying agents are permitted, provided the general character of the finished product is not changed.

In some cases, as under Syrup of Ferrous Iodide, where there are standards, tests and assay, a formula is given but this is preceded by a statement, such as, "Syrup of Ferrous Iodide may be prepared by the following formula." This is in harmony with the principle that when adequate tests are provided for chemical substances, the chemical process may be varied if the resulting products are identical.

Color Standards.—The permissible intensity of color in Cod Liver Oil, and the degree of color permitted under many chemicals when subjected to the action of sulfuric acid, are now controlled by comparison with color standards. These color standards are those proposed by Professor Army and his associates many years ago and the various "matching fluids," as they are officially termed, are prepared by mixing specific proportions of standard colorimetric solutions of cobaltous chloride, ferric chloride and cupric sulfate. This is an important advance and removes the uncertainty of meaning always introduced by descriptive color terms for which there is no color standard.

Reagents.—It will be of interest to chemists to know that the Pharmacopœia has elaborated many of the texts for reagents, bringing them in most instances into harmony with standards established by the American Chemical Society.

Coöperation.—The spirit of coöperation and the enormous amount of time-consuming labor from members of the Revision Committee and also from volunteers is perhaps unparalleled in work of a similar character elsewhere.

It is this interest from members of the pharmaceutical and medical professions which makes possible so unique a program as that which established our Pharmacopœia and which now main-

tains its prestige among similar publications. The unselfish and scientific character of pharmacopœial work must be maintained if Pharmacy is to merit this rich heritage, and our generation must look well to the spirit with which we approach the forthcoming Pharmacopœial Convention. The eyes of the coöperating scientific world are upon us and we who love our profession must zealously guard the essential standards.

With the limited time allotted for this presentation it is possible to touch only a few outstanding features of the revision. Detailed changes, in abstract, in many departments are being published in the A. PH. A. JOURNAL during the next two months and will provide an opportunity for many to obtain information concerning the changes.

THE TESTS FOR REDISTILLED WATER IN THE NATIONAL FORMULARY VI MONOGRAPH.*

BY R. S. ADAMSON, R. K. SNYDER, E. N. GATHERCOAL.

The tests in the N. F. VI monograph for redistilled water are as follows:

Tests for Purity.—Evaporate 100 cc. of Redistilled Water to dryness on a water-bath, and subsequently dry the residue in an oven to constant weight at 100° C.: not more than 0.0005 Gm. of *residue* remains.

Separate portions of 10 cc. each of Redistilled Water are not affected by the addition of barium chloride T.S. (*sulfate*); silver nitrate T.S. (*chloride*); ammonium oxalate T.S. (*calcium*); hydrogen sulfide T.S. (*metals*).

Redistilled Water shows not more than a faint yellow color when 0.1 cc. of alkaline mercuric potassium iodide T.S. is added to a 100-cc. potion (*ammonia*).

Add 10 cc. of calcium hydroxide T.S. to 5 cc. of Redistilled Water: the mixture remains clear and transparent (*carbon dioxide*).

Heat 100 cc. of Redistilled Water to boiling, acidulate with 10 cc. of diluted sulfuric acid, and subsequently add 0.1 cc. of twentieth-normal potassium permanganate: the color of the liquid is not completely destroyed by boiling for 10 minutes (*oxidizable substances*).

Test for Sterility.—Follow the general methods given on pages 24 to 26 for the Testing of Ampul Solutions for Sterility. If the sample to be examined is in a bulk package, follow Section D; plant 10 fermentation tubes with 1 cc. of the sample in each: if growth appears in any of the fermentation tubes, the test may be repeated. If growth appears in any of the second lot of fermentation tubes, the water in the bulk package shall not be used in any product intended for parenteral use. If the sample to be examined is taken from ampuls, follow Section E; if growth appears in any of the fermentation tubes planted, the test may be repeated. If growth appears in any of the second lot of fermentation tubes planted, the whole lot of ampuls shall be discarded.

QUANTITY OF WATER REQUIRED FOR THE TESTS.

Considerable objection has been raised to the use of a large quantity of Redistilled Water (when in ampuls) for making the tests for purity. In U. S. P. X, about 725 cc. of distilled water is required to make the purity tests. Therefore, in the redistilled water monograph, the 100 cc. quantities have been reduced to 10 cc. for the tests for *sulfate*, *chloride*, *calcium* and *metals*, and a 5-cc. quantity for *carbon dioxide*. The 100-cc. quantities are retained for determining the *residue*, *oxidizable impurities* and *ammonia*. This requires a total of 345 cc. of redistilled water.

THE TESTS FOR SALTS.

A solution was prepared as follows:

Sodium Chloride	1.0 Gm.
Sodium Sulfate, anhydrous	1.0 Gm.
Calcium Oxide	5.0 Gm.

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* Scientific Section, A. PH. A., Portland meeting, 1935.

Iron Nitrate	2.0 Gm.
Copper Acetate	1.0 Gm.
Stronger Ammonia Water	3.5 cc.
Acetic Acid,	
Doubled Distilled water, each a sufficient quantity	
To make	1000.0 cc.

Dissolve the salts and the oxide in 750 cc. of the doubled-distilled water with the aid of a little acetic acid, add the stronger ammonia water and then sufficient acetic acid to make slightly acid. Filter, and add enough of the double-distilled water through the filter to make 1000 cc.

Dilute 100 cc. of the solution with double-distilled water to make 1000 cc. and mix well.

Dilute 50 cc. of the dilution with double distilled water to make 500 cc. and mix well.

The final dilution contains 10 parts per million of non-volatile solids.

Two 100-cc. samples of the final dilution were evaporated to dryness. The residues weighed 0.0010 Gm. and 0.0011 Gm.

The qualitative tests were made by adding 1 cc. of the test solution to 10 cc. of the double-distilled water containing the 10 parts per million of added salts and to a "blank" of 10 cc. of the double-distilled water. Also, a few drops of nitric acid were added in the chloride test, and a few drops of hydrochloric acid in the sulfate test. Comparison was made between the "blank" and the "test" after the two mixtures had stood for five minutes or longer in cylindrical graduated tubes. The results were as follows:

Test for:	Redistilled Water.	Redistilled Water with 10 Parts per Million of Added Salt.
Chloride	Unaffected	Very slight cloudiness
Sulfate	Unaffected	Unaffected
Calcium	Unaffected	Cloudiness
Iron	Unaffected	Slight darkening
Copper	Unaffected	
Ammonia	Very light yellow	Light yellowish orange

These results were due to:

		Parts per Million.						
Test for:	Present before T.S. Was Added.		Present after T.S. Was Added.		Solubility in Water.*		Insoluble Residue.	
Chloride	NaCl	1.00	AgCl	2.45	AgCl	1.52	AgCl	0.93
Sulfate	Na_2SO_4	1.00	$BaSO_4$	1.64	$BaSO_4$	1.74	$BaSO_4$	0.00
Calcium	CaO	5.00	CaC_2O_4	11.55	CaC_2O_4	5.54	CaC_2O_4	6.01
Iron	$Fe(NO_3)_3$	2.00	FeS	0.64	FeS	8.9	FeS	0.00
Coppper	$Cu(C_2H_3O_2).H_2O$	1.00	CuS	0.48	CuS	0.33	CuS	0.15
Ammonium Acetate	$NH_4C_2H_3O_2$	4.50						

* "Handbook of Chemistry and Physics," 18th Edition, Charles D. Hodgman, *Editor*.

These results indicate that if but 5 parts per million of chemical salts be present in the water, no one of them will appear in the qualitative tests unless it be predominant in the mixture of salts.

A similar set of tests made on 100-cc. quantities of the same dilution of the solution of salts in water indicated almost the same results. In 50-cc. Nessler tubes the cloudiness might be slightly more evident and in 100-cc. Nessler tubes perhaps slightly more evident than in the 50-cc. tubes.

THE TEST FOR OXIDIZABLE MATTER.

The U. S. P. X uses 0.1 cc. of *tenth-normal* potassium permanganate to 100 cc. of distilled water, and requires that the pink color shall not be entirely discharged.

Early in the work on ampuls, Dr. E. B. Carter published an extensive investigation on pyrogens and claimed that one-tenth cc. of *twentieth*-normal potassium permanganate was ample for this test (see last paragraph of the monograph on redistilled water).

The Joint Contact Committee of the Manufacturers' Associations recommended a modification of this test as follows:

"To 100 cc. of distilled water, add 10 cc. of diluted sulfuric acid, and bring to a boil. Add twentieth-normal potassium permanganate until a faint pink color is obtained, then add an additional 0.2 cc. of twentieth-normal potassium permanganate. Add a measured amount of the redistilled water being tested until the pink color is discharged, maintaining the solution at the boiling point throughout the test. The quantity of this water required to completely discharge the pink color shall not be less than 100 cc. (*oxidizable impurities*)."

After a rather extensive investigation by Raymond S. Adamson, as reported below, it would seem as though there were several objections to the test for *oxidizable impurities* as presented by the Joint Contact Committee.

1. The addition of $N/20$ $KMnO_4$, in appreciable quantity to the preliminary 100 cc. of distilled water, introduces an excess of the reagent unless the distilled water be highly contaminated with oxidizable matter.

2. The use of 0.2 cc. of $N/20$ $KMnO_4$ introduces so much of the reagent that the test becomes very coarse. A much decreased amount should be used to insure a reasonable sensitiveness.

3. The quantity of redistilled water, added to the original 100 cc. of distilled water and the reagents, is so great that the color of the permanganate is lost by dilution rather than by a chemical reduction.

4. It is a question whether a chemical test can be devised that is sufficiently delicate to detect dangerous quantities of bacteria and of their decomposition or metabolic products. Mr. Adamson's report indicates a possibility of distinguishing between the presence of 3 bacteria per cc. as compared with 5 bacteria per cc. To do this, he uses 0.5 cc. of $N/1000$ $KMnO_4$ in 100 cc. of redistilled water and determines the excess $KMnO_4$ by the use of KI T.S. and starch T.S. However, the reading of the test is such a delicate matter that it probably will not be acceptable to some workers. It is estimated that one trillion small bacteria yield about 13 mg. of protein, and that possibly 500 mg. of $KMnO_4$ will be chemically reduced by 1 mg. of bacterial protein. Therefore, the infinitesimal amount of $KMnO_4$ (about 0.1 cc. of $N/1,000,000$) reduced by 500 bacteria is almost too small to measure (0.1 cc. of $N/10$ $KMnO_4$ requires about 50,000,000 small bacteria to reduce it).

The report by Mr. Adamson is as follows:

In the descriptions of these experiments, certain abbreviated forms are used as follows:

H_2O = recently prepared double-distilled water or such water sterilized within 2 hours after being prepared.

H_2SO_4 = Diluted sulfuric acid, U. S. P.

$KMnO_4$ = Potassium permanganate in the designated volumetric solution.

Boil = Heated over a flame in a flask to boiling and kept gently boiling for 10 minutes.

Experiment 1.—To 100 cc. of ordinary distilled water, add 10 cc. of H_2SO_4 and bring to a boil; then add 0.05 cc. of $N/20$ $KMnO_4$, and boil. A pink color remains. It is evident, therefore, that 0.05 cc. of $N/20$ $KMnO_4$ added to a preliminary 100 cc. of distilled water is an excess of the reagent, unless the distilled water be badly contaminated with oxidizable matter.

Experiment 2.—To 100 cc. of boiling H_2O add 10 cc. of H_2SO_4 and 0.2 cc. of $N/20$ $KMnO_4$, and boil. Maintain the solution at the boiling point, add a measured amount of tap water until the pink color is completely discharged. Twenty cc. of Chicago chlorinated tap water completely discharges the color after boiling for 2 minutes.

Experiment 3.—To 100 cc. of boiling H_2O add 10 cc. of H_2SO_4 and 0.2 cc. of $N/20$ $KMnO_4$, and boil: a pronounced pink color remains.

Experiment 4.—To 100 cc. of boiling H_2O add 10 cc. of H_2SO_4 and 0.1 cc. of $N/20$ $KMnO_4$, and boil: a distinct pink color remains.

Experiment 5.—To 100 cc. of boiling H_2O add 10 cc. of H_2SO_4 and 0.1 cc. of $N/20$ $KMnO_4$, and boil. Add to the boiling solution a measured quantity of H_2O, maintaining the solution at the boiling point. At least 350 cc. of the water is added before the pink color is no longer visible.

Experiment 6.—To 100 cc. of boiling H_2O add 10 cc. of H_2SO_4 and 0.1 cc. of $N/20$ $KMnO_4$,

and boil. Add to the boiling solution a measured quantity of H_2O containing 25,000 bacteria per cc. Seventy cc. of this bacterial suspension, or 1,750,000 bacteria are required to destroy the pink color.

Experiment 7.—To 100 cc. of boiling H_2O add 10 cc. of H_2SO_4 and 0.1 cc. of $N/100$ $KMnO_4$ and boil: no pink color is visible. Cool the solution, add 1 cc. of potassium iodide T.S. and 2 cc. of starch T.S., and mix: a distinct blue color is produced.

Experiment 8.—To 300 cc. of boiling H_2O add 10 cc. of H_2SO_4 and 0.2 cc. of $N/100$ $KMnO_4$, and boil: no color is visible. Cool the solution, add 1 cc. of potassium iodide T.S. and 2 cc. of starch T.S., and mix: a light pink color is produced which gradually darkens to a light purple.

Experiment 9.—To 300 cc. of boiling H_2O add 10 cc. of H_2SO_4 but no $KMnO_4$, and boil: the solution is colorless. Cool the solution, add 1 cc. of potassium iodide T.S. and 2 cc. of starch T.S., and mix : no color is produced. After standing one hour, some darkening occurs.

Experiment 10.—To 300 cc. of boiling H_2O containing 750,000 bacteria (2500 per cc.), add 10 cc. of H_2SO_4 and 0.2 cc. of $N/100$ $KMnO_4$, and boil: no color is visible. Cool the solution, add 1 cc. of potassium iodide T.S. and 2 cc. of starch T.S., and mix: no color is produced immediately. After standing one hour, the solution becomes darker.

Experiment 11.—To 100 cc. of boiling H_2O add 10 cc. of H_2SO_4 and 0.5 cc. of $N/1000$ $KMnO_4$, and boil. Cool the solution, add 1 cc. of potassium iodide T.S. and 2 cc. of starch T.S., and mix: a slight purple-pink color is produced.

Experiment 12.—To 100 cc. of boiling H_2O containing 250 bacteria (2.5 per cc.) add 10 cc. of H_2SO_4 and 0.5 cc. of $N/1000$ $KMnO_4$, and boil. Cool the solution, add 1 cc. of potassium iodide T.S. and 2 cc. of starch T.S., and mix: a faint pink color is produced immediately.

Experiment 13.—To 100 cc. of boiling H_2O containing 500 bacteria (5 per cc.) add 10 cc. of H_2SO_4 and 0.5 cc. of $N/1000$ $KMnO_4$, and boil. Cool the solution, add 1 cc. of potassium iodide T.S. and 2 cc. of starch T.S. and mix: no color is produced immediately.

The colors in these experiments are seen to best advantage by using Nessler tubes on a white background and looking down through the depth of the solution in the tube. The bacteria used were *Bacillus Coli.*

Instead of using starch T.S. to detect the presence of the iodine liberated by the excess of $KMnO_4$, chloroform may be used. To the cool solution add 1 cc. of potassium iodide T.S. and 5 cc. of chloroform, and mix. The chloroform layer receives the iodine color, varying from the faintest trace of pink to quite a pronounced iodine color.

The presence of the excess $KMnO_4$ may also be detected by adding a few drops of diphenylamine T.S. to the solution after cooling. The solution acquires a blue color, varying in depth according to the amount of $KMnO_4$ present.

THE TESTS FOR BACTERIA PRESENT IN REDISTILLED WATER.

A test for the sterility of the Water should be included among the tests for purity, and also a test for dead bacteria.

As Redistilled Water is practically always intended for parenteral use, the presence of any bacteria, either dead or alive, is objectionable, for their protein or their metabolic products may be toxic or anaphylactic when the Water is so used. When it is considered that there are many natural spring waters that will show no living bacteria in at least 8 tests out of 10, we certainly should require Redistilled Water, prepared especially to show complete purity, to be free from microbic contamination. The test for sterility indicated at the beginning of this paper is satisfactory.

A test for dead bacterial bodies can quite easily be carried out as follows:

Centrifuge a measured quantity of the water, but not less than 10 cc. in a suitable centrifuge tube, at not less than 2500 revolutions per minute for 30 minutes. Pour off the supernatant water and remove the last 0.1 to 0.2 cc. from the tip of the tube with a capillary pipette, and place it as a drop upon a glass microscopic slide. Rinse the tip of the tube and the pipette with a drop of Redistilled Water and add to the drop on the slide. Evaporate the water from the drop on the slide, fix the residue to the slide by heat, and stain it with a suitable bacterial stain. Not more than five bacterial bodies per cc. of water are present in the mount.

ASSOCIATION BUSINESS

AD INTERIM BUSINESS OF THE COUNCIL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION, 1935–1936.

Office of the Secretary, 2215 Constitution Ave., Washington, D. C.

LETTER NO. 2.

September 5, 1935.

To the Members of the Council:

For the information of the new members of the Council, it is stated that motions made by mail in the interim between meetings of the Council require no second. See By-Laws of the ASSOCIATION, page xxi and By-Laws of the Council, page XXXII, YEAR BOOK, Volume 22. Council Letters for the preceding years will be found in the JOURNAL. The minutes of the First Meeting of the Council for 1935–1936 are being printed and will be mailed to members of the Council as soon as completed.

17. Committee on Library and Committee on Museum. The secretary reported at the fourth and final meeting of the Council for 1934–1935 that nominations had been received from only two members of the Council (see Council Letter No. 13, page 331; No. 16, page 512, item 88) and it was decided that these nominations be made a matter of business in the first Council Letter of 1935–1936. The members of the Council are, therefore, invited to submit nominations for these two Committees, under the following motion which was adopted by the Executive Committee and approved by the Council: "That a special Committee on Library and a special Committee on Museum be created by the Council, membership not to be limited to the Council and to be selected with special reference to their knowledge and experience, to study the development of the Library and Museum, respectively, and to submit plans with respect to each."

18. Resignation of E. Fullerton Cook as a Candidate for the Presidency. The following letter has been received from Professor Cook:

> "It was quite a surprise to me to read in the newspaper at Portland that I had been nominated as a candidate for Presidency of the A. PH. A. I had not been consulted concerning this nomination.
>
> "While I am deeply appreciative of the honor and confidence which my colleagues have shown in offering this nomination, I find it necessary to request the withdrawal of my name as a candidate. Other responsibilities which I have assumed and which must be carried through the next two or three years, would make it impossible—or at least very unwise—for me to even consider additional duties.
>
> "I would ask you, therefore, to place this request before the Council and have the necessary action taken to remove my name from the ballot."

(*Motion No. 1*) *It is moved by Kelly that E. Fullerton Cook's resignation be accepted and that his name be omitted from the official ballot as a candidate for the Presidency.* A vote on this motion will be called for in about one week.

19. Sale and Exchange of Liberty Bonds. Under the Fourth and Final Call, the following Fourth Liberty Loan 4¼% Bonds, 1933–1938, in the funds named, have been called for payment on October 15, 1935, after which date interest ceases:

ENDOWMENT FUND.

Reg. 364524	$ 1000.00
Cou. D00769334	1000.00

CENTENNIAL FUND.

Reg. 158883, 158884	2000.00

LIFE MEMBERSHIP FUND.

Cou. C00681373, C00207763, C01626073	6100.00

RESEARCH FUND.

Reg. 174603, 174604	2000.00
Cou. C02916173, C00574423, C02916193, C02067903, D00332224	5000.00

PROCTER MONUMENT FUND.

Cou. C04140753, D04140754	200.00

REMINGTON HONOR MEDAL FUND.

Cou. D04147934	100.00
Fourth Call	$17,400.00

The holders are offered the options of payment in cash or of exchange at par for 10–12-year 2¾% Treasury Bonds of 1945–1947. These bonds are not callable before maturity and will be dated September 16, 1935, interest payable on March 15th and September 15th. The right is reserved to increase the price above par by notice after September 10, 1935. The bonds called on March 15, 1935, were exchanged for U. S. Treasury Bonds, 2⅞%, 1955–1960, at par (see Council Letters No. 14, pages 426 and 427; and No. 16, page 511).

Chairman Philip of the Committee on Finance writes:

> "With reference to the Fourth Call for Liberty Bonds and the options offered to holders of these bonds, I recommend with the concurrence of Treasurer Holton that those called be exchanged at par for the 10–12-year 2¾% Treasury Bonds, 1945–1947, and so move. It is unfortunate that the third member of the Committee on Finance, Dr. LaWall, is ill. However, it will be recalled that he favored the exchange of the bonds called on March 15, 1935, for U. S. Treasury Bonds 2⅞%, 1955–1960. I wish to repeat the opinion expressed at that time, that a higher rate of interest, while desirable, should not deter us from considering the greater safety of the Treasury Bonds, and that security of principal during these trying times for money entrusted to our care, is the first and most important consideration."

(*Motion No. 2*) *It is moved by Philip, as Chairman of the Committee on Finance, that the Fourth Liberty Loan Bonds listed above be sold and the proceeds be invested in 10–12-year 2¾% Treasury Bonds, 1945–1947, or that the bonds be exchanged on an even basis, and that since some of the called bonds are registered, and as this form is required, the following be re-adopted* (*see Council Letter No. 14, page 427*):

Resolved, that C. W. Holton, treasurer, and E. F. Kelly, secretary, are hereby authorized to buy, sell, deal in, assign or negotiate the called Fourth Liberty Loan Bonds which are owned by, or registered in the name of the American Pharmaceutical Association and to that end, to endorse, transfer and deliver the same.

By direction of the chairman of the Council, a vote on the motion is called for at this time as the exchange should be made by September 10th.

E. F. KELLY, *Secretary.*

RED CROSS ROLL CALL—NOVEMBER 11, 1928.

Red Cross service is as wide as humanity's ills, meeting all manner of distress on the basis of individual and community need. Its twofold programs of cure and prevention range in scope from ministering to victims of disasters to teaching how to bandage a cut finger. There is scarcely a situation of human suffering which the Red Cross is not called upon to meet. *The Red Cross extends the annual invitation to make its service possible.*

THE EIGHTY-THIRD ANNUAL MEETING OF THE AMERICAN PHARMACEUTICAL ASSOCIATION, PORTLAND, OREGON, AUGUST 5—10, 1935

ABSTRACTS OF THE MINUTES OF THE GENERAL SESSIONS.

Sessions of the Eighty-Third Annual Meeting of the AMERICAN PHARMACEUTICAL ASSOCIATION were held in Multnomah Hotel, Portland, Ore. A list of members in attendance may be found on pages 679 and 680 of the August JOURNAL.

Some of the Committee Reports referred to in the proceedings have been printed in the Council Minutes, pages 681, *et seq.*, or elsewhere in the August issue; some are included in this number or will be printed in later issues of the JOURNAL under "Committee Reports" or under "Addresses."

FIRST GENERAL SESSION.

The First General Session of the Eighty-Third Annual Meeting of the AMERICAN PHARMACEUTICAL ASSOCIATION was called to order by President Robert P. Fischelis in the Main Ball Room of Multnomah Hotel, August 7th, at 9:00 A.M. The following former presidents of the AMERICAN PHARMACEUTICAL ASSOCIATION were in attendance: (In order of seniority) James H. Beal, E. G. Eberle, W. B. Day, F. J. Wulling, S. L. Hilton, H. V. Arny, L. L. Walton, T. J. Bradley, C. W. Johnson, H. C. Christensen, W. D. Adams, R. L. Swain.

President Fischelis said that it was hoped to have Bishop William Procter Remington, son of one of the distinguished former presidents, in attendance. He stated that the former is Episcopal Bishop of Eastern Oregon and read a letter he received from him:

> "I deeply regret my inability to accept the very kind invitation of the AMERICAN PHARMACEUTICAL ASSOCIATION to attend the Convention to be held in Portland, August 5th–10th. Only my need of a real holiday this summer prevents my taking part in your proceedings. May I take this opportunity of extending greetings to an ASSOCIATION which engaged so much of my father's interest? His life work was Pharmacy and to it he gave the best years of his life in teaching and in writing the text-books which bore his name. I always felt that my father's devotion to his work had more in it than a mere interest in the cure of bodily ills, through the scientific administration of drugs. It was the human element, the personal relationship with his many students, their ethical standards and their professional attitudes which engaged his best gifts.
>
> "He died ten days before I was consecrated a Bishop in the Episcopal church. It was a disappointment I know to him that none of his three sons followed in his footsteps. However, his work and mine are essentially the same. There is no separation between the ministering of healing to the sick bodies of people and the direct cure of those ills which lie embedded in their maladjustments to life. If I could bring you a message from him at this time I think it would be this. When you dispense drugs, send out with them a new stream of life, courage to the disheartened, new hope to the sick and a charity which may not bring you greater riches, but will make a better world.
>
> Wm. P. Remington,
> Bishop of Eastern Oregon."

On request of President Fischelis, Secretary Kelly read the following:

From Dr. George Urdang, honorary member of the AMERICAN PHARMACEUTICAL ASSOCIATION, Berlin—

> "For the Eighty-Third Annual Meeting of the AMERICAN PHARMACEUTICAL ASSOCIATION I send my best wishes and my regards to all participants.
>
> "I regret it very much that I cannot take part in it. But I hope it shall

be possible for me, in one of the next years, to visit the states and then, naturally, I shall try to come to your meeting.

"May all your work promote the progress of American Pharmacy and the welfare of their members."

From Secretary W. Gnerich, Retail Druggists Association, San Francisco—

"Greetings and best wishes from the Northern California Retail Druggists Association for a successful convention. All druggists returning *via* San Francisco are invited to attend verteran druggists' luncheon on Monday, August 12th, at Stewart Hotel, San Francisco."

Secretary Kelly advised that greetings had also been received from the following: Minnie and David C. Whitney, Kansas City, Mo.; K. B. Bowerman, San Francisco, Cal.; Robert W. Bohmansson, Eureka, Cal.; Mr. and Mrs. J. C. Peacock, Philadelphia, Pa.; Edward W. Runyon, San Francisco, Cal.; Frank L. Grennie, New York, N. Y.

A communication from the Ladies Auxiliary of the North Dakota Pharmaceutical Association, Fargo, North Dakota, follows:

"Please convey to incoming President Pat Costello congratulations and best wishes for a most successful year."

President Fischelis remarked that these communications are much appreciated and that due acknowledgment will be made. He said that in opening the convention he had used a gavel presented to the ASSOCIATION by Mr. Jacobs some years ago. The gavel was made of wood taken from the home of Dr. Crawford Long, who first used ether for anæsthesia.

Another gavel was presented to him personally, made from wood of a tree planted by Richard Stockton. He was one of the signers of the Declaration of Independence from New Jersey. "These gavels," he said, "supply a sound historical background."

President Fischelis then introduced the former presidents of the ASSOCIATION (listed in opening paragraphs). He also introduced President Harvey Henry, of the N. A. R. D., and invited him to a seat on the platform.

E. G. Eberle thought it would be opportune to send a telegram of good wishes to the senior former president, John Uri Lloyd. President Fischelis said: "Without putting it to a vote I will ask the secretary to convey our respects and greetings to him."

President Fischelis asked for a motion, instructing the secretary to send a telegram of greeting to the Canadian Pharmaceutical Association Convention now in session in Vancouver, B. C.

A motion was accordingly made and carried.

On request of President Fischelis the annual report of the House of Delegates was read by Chairman Rowland Jones. On motion duly made and voted the report was accepted.

President Fischelis requested Secretary Kelly to present an item of unfinished business. The secretary stated: "It will be recalled that President Swain last year in his annual address recommended that the By-Laws of the ASSOCIATION be amended to provide that the immediate past-president should serve as a member of the Council for the year succeeding. Also that at the last annual meeting a motion to so amend the By-Laws as to make this recommendation effective was presented. I will so move." It was seconded from the floor.

President Fischelis explained: "It is moved by E. F. Kelly that Article I of Chapter III of the By-Laws be amended by the insertion of the words 'the immediate Past-President' following the words 'The President' in line three (3) with the object that the retiring president shall be an ex-officio member of the Council for the year following his term as president." He presented the motion to adopt and it was carried by vote.

President Fischelis then turned the meeting over to First Vice-President George D. Beal, who said: "We will now listen to the reading of the President's address by R. P. Fischelis, President of the AMERICAN PHARMACEUTICAL ASSOCIATION."

President Fischelis in his introductory remarks stated: "We have had a busy year. Secretary Kelly and I were busy in Washington with a number of things that came up in connection with legislative and other contacts with the Government, so that much of what I have to say to

you this morning covers some of these last-minute activities, and some of it had to be prepared at the last minute. Naturally in reporting the activities of a year we are inclined to report them rather fully and I shall take the liberty this morning of paraphrasing some parts of what will appear later in print, to save your time and not try your patience too greatly."

President Fischelis thereupon read the annual address, including seventeen (17) recommendations which he submitted as a part of the address, on which action could be taken in detail, later in the meetings.

Chairman Beal said that President Fischelis' interesting and constructive address is, by rule, referred to the Committee on Resolutions of the House of Delegates (see pages 635–655, August JOURNAL).

President Fischelis resumed the Chair and thanked Vice-President Beal.

There being no New Business President Fischelis, owing to the absence of Chairman H. A. B. Dunning, requested Secretary Kelly to present the Report of the Committee on Maintenance. Secretary Kelly, before reading the report, stated:

"I was requested by Dr. Dunning to express his regret at his inability to attend in person and give you a somewhat more definite report of the work of the Committee. You realize, of course, that if we attempt to deal with the work of the Committee it would take up a great deal of time. It is the hope of Dr. Dunning that the report will indicate to you the sincere effort being made by the Committee to coöperate."

Secretary Kelly thereupon read the report, as follows:

REPORT OF THE COMMITTEE ON MAINTENANCE AMERICAN PHARMACEUTICAL ASSOCIATION

It will be recalled that at the last annual meeting, President Swain recommended that the Committees on Headquarters Building, on Site and on Plans, be discontinued, since the work of these committees was practically completed with the dedication of the American Institute of Pharmacy and that a Committee on Maintenance be provided to accumulate a maintenance fund, both of which recommendations were approved.

Later, President Fischelis appointed H. A. B. Dunning, Baltimore, Md.; E. F. Kelly, Washington, D. C.; R. L. Swain, Baltimore, Md.; S. L. Hilton, Washington, D. C.; and R. P. Fischelis, Trenton, N. J., as members of this Committee with the writer as its *Chairman*. In the meantime, however, invitations to subscribe to the fund had been issued in letters and in an open letter addressed to the pharmacists of the country. Although the response has not been as satisfactory as we had hoped for, we are pleased to report the following, and it should be explained that the accounts of the Headquarters Building Fund and the Maintenance Fund are being kept separately.

Three new subscriptions amounting to $135.00 and several payments amounting to $160.00 have been received for the Headquarters Building Fund.

The subscriptions to the Maintenance Fund total $132,036.00 of which $50,000 00 represents a bequest to be paid later, leaving a difference of $82,036.00. Of this latter amount, $64,436.00 has been paid.

At the time it was dedicated, there was approximately $40,000.00 due on the building, the grounds, the furniture and the fixtures. All of this has been paid, with the exception of approximately $1000.00 due on planting, and the balance on hand in the Maryland Trust Company amounts to $14,844.56.

The only other obligation against the project is the mortgage of $36,400.00 held by the George Washington University on account of the lot in the rear, which we were obliged to purchase in order to obtain the necessary frontage for the building. This obligation can be reduced from time to time and is amply protected by the bequest of $50,000.00 above mentioned.

The operating expenses of the building are very moderate and, with the exemption from taxes recently granted, there appears to be no reason why the expenses should be materially increased even when the Building is fully occupied.

It is important to bear in mind that the exemption from taxes shall continue so long as the property is used for its present purposes and that occupancy of the Building is limited by the act of Congress to those organizations and institutions serving American pharmacy on a non-profit basis. It seems quite correct to say that, with the exemption from taxes, the plans we originally

had in mind have been carried out and that the American Institute of Pharmacy is on a sound financial basis and does not represent, in any sense, a threat to the security and safety of our ASSOCIATION.

Substantial progress has been made in developing the Library and Museum and it must be evident that the basic work required to collect and place the material at hand has taken much time and effort. Additional funds must be secured to develop these important features of the Institute and it is the purpose of the Committee to continue its efforts in this direction. Contributions of materials are solicited as well as money.

Nothing can be announced about the Research Laboratory at present. When the revisions of our books of standards are completed in the near future, the plans for a laboratory will be taken up with the expectation that it can be developed in keeping with our requirements.

In addition to the subscriptions above referred to, a number of gifts have been made, of which the following are the more important.

The School of Pharmacy, University of Minnesota, presented a valuable exhibit consisting of photographs of the plant gardens and milling equipment of the School and of the medicinal plants grown and prepared therein. The photographs are handsomely mounted in a display stand and have interested many visitors, as illustrating an important pharmaceutical activity not generally known to the public. This type of educational exhibit is very helpful—and it is hoped that each school and college will present an exhibit illustrating some outstanding activity of the institution.

Mr. and Mrs. J. C. Peacock, both of whom are life members of the ASSOCIATION, have presented through President Fischelis—a complete projection apparatus for the meeting room which is a valuable addition to our equipment. Several medical and scientific organizations have met in the building and the contacts thus established will be beneficial.

The District of Columbia Pharmaceutical Association recently presented a fund of $250.00 for a special purpose which has not yet been worked out.

The National Association of Boards of Pharmacy contributed a set of its proceedings: Mr. O. U. Sisson, an enlarged photograph of "The Laboratory."

Miss Esther Barney, a framed and colored picture of the Pharmacy Exhibit at the Century of Progress; Mrs. True and Mrs. Holton, a counter scale and other equipment from the original Sharp and Dohme retail pharmacy, as well as a number of photographs; Mrs. Harvey A. Wiley, a number of books and pamphlets from the library of her late husband.

A number of other interesting and valuable gifts might be mentioned but those referred to will illustrate that interest is being taken and no doubt the number and the scope of contributions will increase as the Institute and its purpose becomes better understood.

Reference should be made to the many visitors to the building—no particular effort has been made to invite visitors, because the library and museum were being organized. However, the number of visitors, pharmacists and those connected with the drug industry, as well as members of the other public health professions, government officials and layman, is steadily increasing. They come from every section of the country and from many foreign countries. Their comments indicate that the impression created by the building, the location, and the purposes for which the Institute is intended is favorable for pharmacy.

It is difficult to estimate the practical value of the Institute when it is developed and occupied as planned and when it can be thrown open to visitors for certain hours each day. The bureau which conducts the thousands of high school students who annually visit Washington has requested to be advised when our building may be added to the list of institutions to be inspected.

The Committee wishes to record its appreciation of the support given the project during the year and to again invite continued coöperation.

Respectfully submitted,
H. A. B. DUNNING, *Chairman.*

Secretary Kelly concluded: "President Fischelis, Dr. Dunning has also asked me to briefly refer to two developments in our immediate neighborhood which it is felt will interest members here, and will indicate our favorable position in the city of Washington, and that we were fortunate in securing our location in the Capitol City at the time we did."

Secretary Kelly thereupon gave a brief report of the two developments in question, and at

the conclusion of his remarks informed President Fischelis that: "Dr. Dunning asked me to express his greetings to all in attendance."

The references were: (1) That the site between Twentieth and Twenty-First Streets has been allocated to the Federal Reserve Bank which will erect thereon, beginning this fall, a building for its headquarters. This site is the only one facing on Constitution Avenue which had not been allocated; (2) most tentative plans for the development of the area to the rear of our site have been published and indicate that this area will be developed in keeping with this important section of the Capitol City.

President Fischelis referred to the fine report on the headquarters building.

A motion was made by H. W. Youngken, seconded by Mr. Frank Mortensen, that the report be received for publication.—Carried by vote.

The secretary also referred to the plans of the Landmarks Society of Alexandria, Va., for the restoration of the building occupied by the Stabler-Leadbeater Apothecary Shop since its founding in 1792. The equipment, stock, records, etc., of this pharmacy are owned by the AMERICAN PHARMACEUTICAL ASSOCIATION and will be housed in the restored building as a museum. Reference was also made to the exhibition of materials from this pharmacy in the lobby of the hotel.

President Fischelis introduced Dr. Joseph A. Pettit, who delivered an address on "The Practical Value to the Pharmacists of the Activities of the Council on Pharmacy and Chemistry of the American Medical Association." (Copy of the address is to be supplied by Dr. Pettit for publication in a later issue of the JOURNAL.)

President Fischelis thanked Dr. Pettit for his very interesting discussion of the work of the Council.

President Fischelis introduced Dr. P. T. Meany of the North Pacific College, Portland, who delivered an address on "Dentistry and Pharmacy."

Dr. Meany prefaced his address by saying that he was interested in pharmacy. In 1900 he contributed to the collection of cascara bark. (The address is to be published in a later issue of the JOURNAL.)

President Fischelis thanked Dr. Meany and expressed appreciation of the coöperation existing between dentistry and pharmacy.

On motion, duly seconded, the first General Session was then adjourned.

SECOND GENERAL SESSION.

The Second General Session of the AMERICAN PHARMACEUTICAL ASSOCIATION was convened in Multnomah Hotel, Thursday, August 8th, at 2:00 P.M. by President Robert P. Fischelis. He called for the reading of the minutes of the First General Session; these were read by Secretary Kelly and by motion duly seconded and a vote, they were approved. (These minutes are printed in this issue of the JOURNAL.) Secretary Kelly read a communication from Secretary John W. Dargavel, of the National Association of Retail Druggists; it follows:

> "Regret that circumstances beyond my control prevent my attendance at meeting of AMERICAN PHARMACEUTICAL ASSOCIATION. Please convey my best wishes for a most successful and constructive meeting and also the appreciation of National Association of Retail Druggists for splendid coöperation and help you have given during past year for benefit of commercial pharmacy. It has been a pleasure to work with you and I am sure there is a much better understanding between the two associations than there has been in past years. Please be assured that we will do everything possible to see that this feeling is strengthened. We are cognizant of the fact that by working together the two associations can be of mutual benefit."

President Fischelis expressed the pleasure of the ASSOCIATION, and stated it would take the usual course.

The report of the House of Delegates was read by Chairman Rowland Jones and it was approved on motion duly seconded and a vote.

An address, "The Pharmacopœia of the United States and the Federal Food and Drugs Act," was presented by James H. Beal.

President Fischelis referred to the fine presentation and asked for discussion of the address, if desired.

There was no discussion and on motion of F. H. Freericks and seconded by Henry F. Hein, the address was accepted for publication. (It appears in this issue of the JOURNAL.)

Local Secretary A. O. Mickelsen made announcements relative to the entertainment programs.

The report of the Special Committee on The Council on "Pharmaceutical Practice," was presented by Chairman E. Fullerton Cook; it follows:

REPORT ON THE PROPOSED COUNCIL ON PHARMACEUTICAL PRACTICE.[1]

At the last meeting of this ASSOCIATION, in the General Session, an opportunity was given for the discussion of a suggestion that the AMERICAN PHARMACEUTICAL ASSOCIATION establish a unit to actively operate in the national field of professional pharmacy both as an inspirational and an evaluating body.

After the discussion a Committee of the ASSOCIATION was appointed to give the proposal further study and to report directly to the AMERICAN PHARMACEUTICAL ASSOCIATION Council. After considerable correspondence the members of this Committee met at the headquarters building in Washington, reviewed the plans, outlined a tentative program and submitted their suggestions to the A. PH. A. Council.

The Council subsequently passed the following resolution:

> "The A. PH. A. Council approves the establishment of a Council on Pharmaceutical Practice to be conducted under the auspices of the AMERICAN PHARMACEUTICAL ASSOCIATION with personnel as recommended by the Special Committee. and the Special Committee is continued for the purpose of developing the plan in conjunction with the Council on Pharmaceutical Practice to report at the Portland Meeting."

The first step has therefore been taken toward the development of a plan of far-reaching significance to American pharmacy, and the Council of this ASSOCIATION is on record as approving the establishment of this new Council.

Various members of the Special Committee were assigned specific phases of the question for further study and their reports have been reviewed and the whole question further discussed since reaching Portland this week.

The Committee has decided at this time to submit only a tentative report, outlining the general proposal and invite further discussion and suggestions from the pharmacists and physicians of the Country.

If the suggestions are approved and a practical plan for its operation can be developed, the "Council on Pharmaceutical Practice" can be organized and its program started. It is recognized that to effectively operate the machinery of this organization many difficulties will have to be overcome and an effective executive force established. The questions now to decide are whether such a body is needed, whether the AMERICAN PHARMACEUTICAL ASSOCIATION is in a position to effectively handle it and whether the pharmacists of America will support it.

But the tentative plan must be given before these questions can even be discussed. It will be understood, of course, that whatever cannot be outlined is subject to modification and that it is offered as a basis of discussion, but that it does carry the basic principles of such an organization.

The Tentative Plan—Objectives.—To develop and improve the practice of professional pharmacy in the United States in at least three divisions, *i. e.* (1) among retail pharmacists in community practice, (2) in hospital pharmacy, and (3) in pharmacy in Government services.

Title of the Directing Body.—"The Council on Pharmaceutical Practice."

Representatives on This Council.—The Executive Body.

A Pharmacist in retail service.

A Hospital pharmacist.

A pharmacist in Government service.

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[1] Presented at Portland, A. PH. A. meeting, August 1935.

The Chairman of the U. S. P. Revision Committee.
The Chairman of the N. F. Revision Committee.
A representative of the American Association of Colleges of Pharmacy.
A representative of the National Association of Boards of Pharmacy.
The A. PH. A. President *ex-officio*.
The A. PH. A. Secretary *ex-officio*.
A full-time director.

In addition to the executive body it is also recommended that one representative from each of the following organizations be invited to participate solely in an advisory capacity, in some of the conferences of the Council.

The American Medical Association.
The American College of Surgeons.
The American College of Physicians.
The American Dental Association.
The American Nurses Association.
The American Hospital Association.
The National Association of Retail Druggists.
The American Drug Manufacturers' Association.
The Food and Drug Administration.
The Surgeon General of the Public Health Service.
The Surgeon General of the Army.
The Surgeon General of the Navy.

The significance of conferences with representatives of these groups is evident. The pharmacist in the hospital must become a part of the medical service and coöperate effectively with the other professional divisions of the hospital. The same is true of the medical departments of the Army, the Navy, the Veteran's Bureau and the Public Health Service.

The standards and duties of the pharmacist in government departments must be developed in consultation with the medical groups if the pharmacist is to render efficient and effective service.

The pharmacist in community life has duties in a wider latitude of operations, but the specific phase of his pharmaceutical service, with which this Council is concerned, is that which brings him into close affiliation with the medical and dental professions and provides in this field the opportunity to supply an important and necessary link in the maintenance of health.

There have been repeated evidences that the public is interested in this problem. Individual members of the medical profession and organized medical groups are asking that there may be some indication whereby they can be guided in the selection of pharmaceutical service. Naturally they turn to the AMERICAN PHARMACEUTICAL ASSOCIATION as a material organization established for the purpose of promoting professional pharmacy.

The Functioning of the Council.—It is likely that there would first be a thorough study of the present needs in each of these fields of activity followed by an intensive educational program. While basically the same knowledge is needed in all three divisions, the detailed plans and their application will have to be different in each group.

These preliminary studies, leading to the development of an approved program and the winning of the enthusiastic support of the associated professions must precede what it is believed will ultimately be its most significant feature, namely, the offering of an opportunity to pharmacies and pharmacists in community service to register with this National Council, thus establishing their status as professional pharmacists before the community and medical profession.

The basic principle will have to be voluntary registration. Pharmacists who have demonstrated their interest in professional pharmacy by establishing pharmacies well equipped to perform the many duties presenting themselves in this field, who are maintaining the professional standards as evidenced by their own practices and consequently have the confidence of members of the medical and dental professions and of the public, should have no difficulty in demonstrating these facts and of receiving recognition.

Naturally those who take this step will benefit in many ways and the AMERICAN PHARMA-

CEUTICAL ASSOCIATION will be performing a service to pharmacy, to medicine and especially to the public through improved medical service.

If this plan is approved the details will have to be developed and a full-time director of the program, with suitable secretarial help, will be a necessary feature. The issuance of the many professional helps to those registered with the Council and especially the conduct of the organization needed to check for approval those pharmacies and pharmacists applying for registration, make this a necessity.

Discussion of the proposal is invited and it is recommended that the A. PH. A. Council approve the continuance of this committee to further study the plan before any effort is made to start any of its functions.

The Committee,

H. V. Arny	E. N. Gathercoal	R. P. Fischelis	Edward Spease
C. B. Jordan	E. F. Kelly	Robert L. Swain	Robert R. Gaw

E. Fullerton Cook, *Chairman.*

President Fischelis said: "This report is now before you. The Council on Pharmaceutical Practice has been studying this subject for the past year. I know that many of you must be interested in what they are trying to do. This is the time to voice your views on the subject."

DISCUSSION.

H. V. Arny: "I would like to discuss the subject solely from the standpoint of the registration of prescription pharmacists. This has been dear to my heart for more than twenty-three years. Back in 1912, I read a paper at the Denver meeting of the AMERICAN PHARMACEUTICAL ASSOCIATION on what I called the American Institute of Prescriptionists. This was the first definite proposition made concerning this matter. I read some years ago a statement made in a scientific journal to the effect that any man who makes an outstanding discovery has to wait twenty years before it is realized. It is now twenty-three years since this proposition was brought out. I want to disclaim any precocity for my idea.

"In 1910 my good friend Dr. Walter Bastedo read a paper before the Academy of Medicine, New York, referring to the horrible degree of commercialism among the pharmacists in New York. He knew what he was talking about. He was not only an eminent physician but a pharmacist before he became a physician.

"In that paper of 1910, Dr. Bastedo suggested to the Academy of Medicine that the time would come when it would be necessary for doctors to have a list of certified pharmacists.

"It was just at that time we first heard of certified milk. Milk of all kinds was being sold regardless of standards. As you know, this certified milk authority investigated dairies to find which were safe and that was called certified milk. I see the danger of the certification of pharmacists by the medical group. For that reason I brought the paper to the Denver meeting. I requested that a committee be appointed to study the question, suggesting the matter to a group of outstanding men in our ASSOCIATION at that time. I also suggested that it was too important a matter to handle in that meeting, and asked that the committee report the following year.

"When the report was submitted in 1913 it came from one of the most eminent practitioners of that time. He has now gone to his reward. The report consisted in the decision that it was best to defer action.

"I have since addressed pharmaceutical groups in various cities. We stand now exactly where we stood in Denver in 1912—nothing done. The reason is the apathy of prescription pharmacists. They did not care to have it. I might make two notable exceptions—Dr. Hilton and Dr. Lascoff were willing. Other pharmacists were not willing. Those men who enjoyed high reputations as prescription pharmacists were enjoying a fine business and did not care to share it with others. I state this plainly because it is so. I made my swan song plea before the Academy of Medicine in New York and stated it was the last time I would bring the matter up.

"I want to point out that as time has gone on, things have gotten worse and worse so far as commercialism of stores is concerned. I hope that my friends who are commercial pharmacists will not be offended. I even dare to say that only one out of one hundred stores is of the sort where I would want one of my own prescriptions filled. We have statistics which show that there

are 50,000 to 60,000 drug stores in this country, and there is not enough prescription business to support more than 5000 prescription drug stores. The problem is to segregate.

"I think Chairman Cook's report is a model of skilful pleading. He has emphasized as much as he could that it has got to be, first of all, a voluntary action on the part of the prescription pharmacists.

"If this proposal goes through it will act as a buffer between the prescription pharmacist and the prescribing physician. It will be a voluntary undertaking open to all prescription pharmacists, offering their names and submitting themselves and their pharmacies to an examination and permitting themselves to be enrolled upon the selected list of certified pharmacists. It is up to the prescription pharmacists to accept the invitation and receive the benefits.

"If you do not permit the AMERICAN PHARMACEUTICAL ASSOCIATION to do this service for you, the American Medical Association or some similar medical body will do it for you, with the result you will be under medical domination."

R. V. Robertson: "My father and I are in the prescription business in Spokane. To me this is an outstanding move. We haven't a large business. We live and are happy. I do think we have here the start of something that can grow more than we realize. The American Medical Association's success, I believe, has been based largely upon its integrity within itself and its ability to control its own members. I agree with Dr. Arny that if we do not do it ourselves, it will be done for us. I trust that wheels will be moved in this meeting that will further this."

S. L. Hilton: "I have had the experience of more than twenty years of conducting a professional pharmacy. I cater almost exclusively to the physician and to the physician's patients. I think it fortunate that at the outset I was invited to become a member of the Medical Association of the District of Columbia. That entitled me to a fellowship in the American Medical Association. I receive every Saturday morning a copy of the *Journal of the American Medical Association*. The first thing I do is go over the copy, as I know that before the day passes I will receive one to ten requests from physicians concerning it. I compel my clerks to do the same thing so that in my absence if a request comes from a physician they can comply. I have it on file in a regular filing cabinet where we can turn to it quickly. The result is, physicians at Washington are constantly in consultation with me and my clerks. It has been an advertisement that has been most profitable. I can say that 65–75 per cent of my business comes over the telephone and comes from the best people in Washington. I have felt that it has been one of the best assets I have had, to have cultivated the good-will of the physician, and get the business. I have a complete line of bacterial strains, re-agents that will keep, so we are able to supply the demand promptly. Those that do not keep we make to order. We have one good size closet full of these products. We are constantly making them. We carry quite a stock of chemical glassware, and that is a profitable line. The physician appreciates it. I feel that the more we can do to assist in this movement in our own ranks the better it is for us, because if we do not do it some one else will do it for us and we will have to comply. Thank you."

President Fischelis requested expressions from retail pharmacists on the proposal, if deemed not feasible.

Chairman E. Fullerton Cook explained that the major objective is to give an opportunity to the professional pharmacists to register with the National Council and, in that way acquire a distinctive place in the community, by informing the public they are qualified to render professional service.

Frank Mortenson inquired whether the National Council will pass on pharmacists who are qualified. Chairman Cook replied in the affirmative and Mr. Mortenson stated that one pharmacist might be approved, another not.

Chairman Cook replied that this is the crux of any proposal of this kind, and that it would not be possible for anyone to say at this time how the selection would be made. The pharmacist would apply for the opportunity; he would be requested to fill out a blank with facts concerning his pharmacy. If these are not acceptable the deficiency will be pointed out and an opportunity given him to conform. If the report is in conformity with the questionnaire, then some plan of inspection would be followed. The American College of Surgeons has a plan of this kind in operation. They very carefully secure data concerning the surgeons and when accepted by the

Council they are registered. It is a very important factor in the success and standing of the surgeons of the United States. This plan would be operated in a similar manner.

Henry Hein remarked that this is a complicated subject and he was not surprised to learn of the time it has taken to arrive at this point. The coöperation of physicians is essential for effective operation.

President Fischelis asked for the views of a hospital pharmacist on the subject.

William Gray said that a hospital pharmacist has the viewpoint of the physician rather than the pharmacist; his duty is to serve the physician and answer all questions regarding pharmaceutical preparations. He is called upon for information regarding products. Therefore, in that respect a hospital pharmacist is listed in the effort.

H. A. K. Whitney stated he had all the bias of an individual who prides himself on the general practice of pharmacy, and pharmacy, only. Last year he was so attracted by this proposal that he took it upon himself to inquire in his home town, a city of 27,000 people, where there are two pharmacists, at least, who might qualify. Accordingly, he interviewed two of the proprietors and explained the proposition. In each instance the proprietor of the store intimated he would welcome an opportunity to ask for registration and would be pleased to display the emblem.

He approached another pharmacist, in a city of 11,000 people, who has been making an effort to contact the physicians. The results were favorable. Since then he has interviewed others with encouraging results. He believed that this proposal, if accepted, will be happily received by the pharmacists of the United States who are professionally minded.

President Fischelis pointed out that this is not an attempt on the part of the AMERICAN PHARMACEUTICAL ASSOCIATION to divide drug stores arbitrarily into two classes. The opportunity for certification is not limited to exclusive prescription pharmacists. Any store, properly equipped, that can render the type of service required by the medical profession to-day will be eligible to certification. He desired all to carry away a correct impression; those who have contributed to the deliberations have made it possible for the committee to intelligently study the proposal.

John Culley asked whether a provision for the emblem would show the public and the physician that the pharmacist is registered with the Council.

Chairman Cook felt assured that an emblem would be provided which would indicate its purpose.

C. E. Mollett said he was greatly interested in the proposal; it was one step in advance of that taken by Texas and California. They have tried to develop this idea. He hoped for the success of the movement, for it will be a wonderful thing for the professions. If a pharmacist is capable, if his equipment is proper, and he makes his displays so it is apparent that he practices pharmacy rather than merchandising, then the physician becomes a walking advertisement for him.

Edward Spease: "The American College of Physicians and the American College of Surgeons have been mentioned here. They have undertaken certain functions. One is the selection of members. There are only a few members of the American College of Surgeons in each locality.

"One of the additional functions is known as 'approval of hospitals;' it means a study of each and every department in a hospital and certain regulations. Regulations have never been laid down for pharmacists in hospitals. We have been asked to outline recommendations and to appear before the American College of Surgeons in San Francisco this fall to present the matter, and discuss the regulations which they hope ultimately to adopt. One of the first principles will be that every hospital must have pharmacy service, *first*, a resident pharmacist, or, *second*, pharmaceutical service from a proper pharmacy on the outside. That leads to the question: What is this approved pharmacy or proper pharmacy on the outside?"

Dean Spease considered this movement very timely and one that should be given consideration.

A motion was made by him, and duly seconded, that the recommendations of the committee be adopted.—Carried.

The next subject of the program was an address, illustrated by lantern slides on "Prescription Department Economics—Some High Lights of the Revised Edition of the Professional Pharmacy," by Frank A. Delgado. (The address will be published in a later issue of the JOURNAL.)

President Fischelis commented favorably on the paper and announced as the next feature of the program a "Symposium on Prescription Pricing," presented by F. C. Felter.

Mr. Felter stated that he understood there would be two other speakers on the subject—Leonard Seltzer and G. L. Secord; neither of them was here to present the papers; Mr. Seltzer's paper was read by C. Leonard O'Connell and will be published later. Mr. Felter presented his paper which is published in full in the *Pacific Drug Review* for September, pages 28–34.

There being no further business the meeting was adjourned.

Third and Final General Session.

The Third and Final General Session of the American Pharmaceutical Association was convened at 8:00 P.M., Friday, August 9th, by President Robert P. Fischelis.

The minutes of the Second General Session were read by Secretary E. F. Kelly, and approved. President Fischelis stated that in the First General Session a telegram of greeting was sent to the Canadian Pharmaceutical Association in session in Vancouver, B. C. The following message from this body has been received:

> Reciprocate good wishes for successful Convention Stop May your deliberations result in elevating the status of pharmacy and improving business and professional conditions hearty greetings to your members from Canadian Pharmaceutical Association
>
> (Signed) R. B. J. Stanbury, *Secretary.*

President R. P. Fischelis read a telegram from the Senior Past-President John Uri Lloyd:

> Greatly pleased to be remembered by my friends of the American Pharmaceutical Association Much regret I could not be present Accept my thanks for your kind message With my best wishes for all
>
> (Signed) John Uri Lloyd.

President Fischelis read a communication received from Dr. Edward Kremers, a former Honorary President of the Association, as follows:

> Traveling with the American Pharmaceutical Association for a lifetime, I have seen many a state of the Union, but it has never been my good fortune to join my fellow members when our organization met in the Rockies or beyond. When, therefore, the Association decided to meet this year in Portland, I planned to go for I considered it my last opportunity to see the Pacific. "Behuet dich Gott, es waer so schoen gewesen," "Behuet dich Gott, es hat nicht sollen sein." However, unlike the trumpeter of Saeckingen, I do not bemoan my misfortune for I have assurance that I am at the present moment most needed where I am. Four candidates for the doctor's degree demand my presence here, whereas at Portland, there will be many a younger representative of American pharmacy to fill any breech due to my absence.
>
> However, my thoughts are with the members of the American Pharmaceutical Association and, more particularly with those members to whom I am attached by personal friendship. To one and all I send cordial greetings in the hope that the Portland sessions may prove another step in the advancement of the calling we love and to which we have pledged our best life activities.
>
> Sincerely yours,
>
> (Signed) Edward Kremers.

President Fischelis said that these communications will take the usual course.

The final report of the House of Delegates was read by Chairman Rowland Jones, of the House of Delegates.

Chairman Jones called upon Mr. R. L. Swain to read the Resolutions approved by the House of Delegates by title. After reading them, President Fischelis asked for a motion. A motion was duly made and seconded that the report of the House of Delegates be adopted.—Carried.

President Fischelis called attention to the fact that the local press has been unusually

generous with reports of the convention. The Local Committee made clippings, which were displayed.

There being no unfinished business, President Fischelis requested Secretary Kelly to make a presentation. He said in part: "Among the efforts to secure popular recognition of pharmacy in the United States we recognize the exhibit at the Century of Progress Exposition in Chicago. Many of us had the opportunity to visit the exhibit, and many have read about it in the lay press. We realize that it created a profound impresson on the large numbers who were privileged to view the exhibit and recognize the great effort in time and attention to make this exhibit possible and to make it an outstanding success. It is well known that the work was in charge of and definitely under the leadership of one of our prominent members.

"At the meeting of the ASSOCIATION in Madison, two years ago, the Council authorized the secretary to prepare a tribute in suitable form. When the secretary was ready to proceed with this very pleasant duty the chairman of the Committee, with his characteristic modesty, insisted that the tribute be paid to the other members, as well as himself. With that understanding, the Council has instructed the secretary to comply with the request. Now as most of you do not recognize of whom I am speaking I will ask Dr. H. C. Christensen to please come forward. Chairman Christensen is a man of parts, a man of distinction. To-night he stands here to represent not only himself but also the other members of the committee, Mr. Julius Riemenschneider and Dr. Frank A. Kirby. Those who visited the exhibit will recall that it was supervised by a very dynamic person, Miss Esther Barney. In addition a student from the School of Pharmacy, University of Illinois, Mr. Niemic, contributed his services to demonstrate pharmaceutical dispensing. Chairman Christensen has kindly consented to accept these memorials for himself and for the others in his organization for a most outstanding contribution to pharmacy.

"Mr. Christensen, I recognize that you have many things to frame in your house and feel sure Mrs. Christensen will make room for this additional memorial. I take pleasure in presenting to you these very simple but no less sincere tokens of our appreciation of the services of yourself and your associates, with the hope that they will be constant reminders of our appreciation and of the favorable impressions made on the many thousands who saw the exhibit."

H. C. Christensen spoke in part as follows:

"Members of the ASSOCIATION, *Guests and Ladies:* I hardly know what to say. This was a complete surprise to me. I am, however, happy to know that the effort we made to bring to the attention of the public the service which pharmacy renders to that public has been appreciated to such an extent by this wonderful ASSOCIATION, so that they recognize by this memento to me, as *chairman*, and to my assistants on the committee for the exhibit, the efforts we made. The time is too short to go into any details of the exhibit. Those of you who visited it know what it consisted of, and the methods which we used in reaching the public.

"This morning I presented what I titled as Part I of a history of the exhibit. The first part mentions items regarding the inception, how it was suggested, and how it was finally taken over by the AMERICAN PHARMACEUTICAL ASSOCIATION and delegated to the Committee to carry out. It would have been impossible for your Committee to carry out this problem without the assistance which it received so loyally not only from those in the profession but from many associated with the profession in the drug industry generally.

"We collected something over $14,000.00. We still have a little balance on hand which I might say will be used to install a reproduction of the exhibit in the Museum of Science and Industry in Jackson Park, Illinois, on the site of the old Fair Grounds of 1893. This building, as some of you know, has floor space of between ten and twelve acres and a proper amount of space has been allotted to pharmacy for this exhibit. Pharmacy will be one of sixteen exhibits, mostly medical, in a department to be known as the Department of Medical Science. The pharmaceutical exhibit will be permanent. We hope to reproduce the exhibit as it was at the Exposition in Chicago, but we have in the contract the privilege to enlarge on the Exposition exhibit, and make it permanent. I believe you will agree that it is a great thing for pharmacy to be recognized on a basis with other medical science. I believe this is the first time in the history of pharmacy that anything of that extent has been known."

Chairman Christensen thanked the ASSOCIATION and said he would convey these mementos to his colleagues in Chicago.

There being no new business President Fischelis announced the presentation of the Ebert

Prize by Dr. E. V. Lynn, Chairman of the Scientific Section. He said: "It is my pleasure to formally announce that the Ebert Prize for 1935 has been awarded by the Committee on Ebert Prize to Professor Marvin J. Andrews of the School of Pharmacy of the University of Maryland, Baltimore, Md., for his papers on 'The Determination of the Reasonable or Permissible Margin of Error in Dispensing,' presented to the Section on Practical Pharmacy and Dispensing. To our regret, Professor Andrews was prevented from attending and receiving the award in person."

President Fischelis stated that as Professor Andrews is not here he would ask Secretary Kelly, a very close friend to the Professor and who will no doubt have an opportunity to present the prize in person, that he do so when opportunity affords. We are, of course, very sorry that Professor Andrews is not here to receive it in person.

The next order of business was the installation of officers and President Fischelis requested L. L. Walton, who has in recent years served as installing officer, to come to the speakers' table. He also called on William B. Day to assume the active duties of Installation of Officers.

President Fischelis said that only three new Council members are elected each year, and asked James H. Beal, C. H. LaWall and R. L. Swain, to come forward. Due to serious illness Dr. LaWall was not present; the other members were duly installed.

The Second Vice-President, J. Lester Hayman, and First Vice-President, Frank A. Delgado, were duly presented and installed.

Editor E. G. Eberle and Secretary E. F. Kelly were presented.

Owing to the absence of Treasurer Charles W. Holton, he was represented by Hugo H. Schaefer in the installation.

The officers of the House of Delegates, who had been installed, were presented: Roy B. Cook, *Chairman*, and C. Thurston Gilbert, *Vice-Chairman*.

The installing officer said it was now in order to mention the most important member of this group, the man to whom the membership of the ASSOCIATION gives the greatest honor within its power and accompanies therewith the greatest responsibility, a man who has served the ASSOCIATION faithfully and well, who has presided over our House of Delegates very patiently and efficiently and to the satisfaction of the members, and who will make a worthy successor to our president—I refer to Patrick H. Costello, of North Dakota, and ask his presence up here before the assembly.

President Fischelis said: "*President Costello*, you come to this office with a background of considerable experience, not only as a pharmacist but as an Executive Officer of the Board of Pharmacy. Shortly after I became president of this ASSOCIATION I was talking with a distinguished dean outside the field of pharmacy. He was discussing what I might do in this office. He said: 'I have one piece of advice to give you—be yourself.' I am sure if the president-elect will 'be himself' we will be furnished with a very fine and efficient administration. President Costello, I turn over to you the badge of office. I know you will reflect honor on the AMERICAN PHARMACEUTICAL ASSOCIATION. I turn over to you the gavel knowing, as do our members, that you will use it wisely and well in presiding over the General Sessions."

Mr. Costello: "Thank you, Dr. Fischelis, for the praise you have given me. I trust I will carry on in a manner you will approve of. I am sure that as you relinquish the duties of president you will continue to give the type of service to the ASSOCIATION that you have in the past, with distinction to yourself as a pharmacist."

President Fischelis called upon Mr. Patrick H. Costello for his address. He spoke in part as follows:

INSTALLATION ADDRESS OF P. H. COSTELLO.

"It is with a deep sense of gratitude and appreciation that I assume the duties and obligate myself to the responsibilities of the office of the President of the AMERICAN PHARMACEUTICAL ASSOCIATION. The privilege of serving in the capacity is a distinction which I did not aspire to nor did I expect to be thus honored. Only a comparatively few members have received this distinction and in my opinion the selection of my predecessor evidenced the good judgment of the membership.

"My desire is to serve acceptably and merit your approval—to do so will necessitate calling upon those who have guided and administered the ASSOCIATION wisely thus far, for their counsel and advice in directing the affairs of this organization.

"In assuming any position without taking certain preparatory steps, it is apparent that the lack of information concerning details connected therewith serves as a temporary handicap. Unfortunately, or not, that is the situation, in the light of which it is not for me to make specific recommendations or criticism immediately after my induction into office.

"None are better able or more qualified to make timely recommendations or give direction than our officers, particularly the outgoing president, secretary and the members of the Council, who are continued in office and are thoroughly conversant with all phases of pharmacy and of the ASSOCIATION. Their recommendations, based upon experience and knowledge, serve a useful purpose.

"It is for the House of Delegates, representing pharmacy as a delegate body, to consider carefully the recommendations and proposals placed before the members, before they are passed upon, especially those having to do with policy and organization. The House of Delegates is and should be to Pharmacy what Congress is to the Nation. Our profession has many members and individually, we may have many ideas and opinions, and many proposals and theories may be advanced.

"It is necessary that we have a delegate body, representative of pharmacy, to act as a clearing house for the plans and program to be carried out. That is the right way to do things; it is the American way. Between meetings, with your approval, the officers carry on in an understanding way. There is only one more democratic way, that is, to have contact with every one of the men and women who are engaged in Pharmacy. It would be impossible to have all represented at one meeting, and if it were, each could not be given an opportunity to express himself. A near approach to this would be to have the president and secretary of each State Pharmaceutical Association present at the meetings as delegates. They know the thought and the need in their respective states. Such close personal contact and the counsel of these divisional leaders would be valuable.

"During the past year the lack of a definite policy, definite objective and effective form of organization has been voiced frequently as a glaring fault of Pharmacy. This is a challenge to our thinking and our doing. That this organization could have increased the scope of its activities in the past cannot be denied; that it did not, is not to be criticised. Having for its aim and purpose the professional advancement of pharmacy, it is not strange that other organizations were brought into being to deal with the purely commercial side which was becoming an important factor. That situation made it logical for each organization to restrict its scope and function in its own field.

"About twenty years ago it was recognized that pharmacy needed a more adequate representative machinery for doing the things, all too long neglected, and a federation of all pharmaceutical organizations was proposed—an affiliation of all State, National, County and Local associations.

"That same need is before us to-day, and because we lack a unified force we still remain on the defensive. A fact, which has been repeatedly pointed out, is—that the total number of pharmacists holding a membership in any national organization does not represent a majority of the profession—should cause us to turn our attention seriously to ways and means of correcting that condition.

"I am not certain such a federation or affiliation is feasible, or the best form of organization, but, since some State associations look with favor upon it, due consideration must be given it after all the factors pertaining thereto have been analyzed.

"An ideal situation would be one resulting from an awakening of the entire body of pharmacists whereby a majority would become organization-minded and active dues-paying members in our ASSOCIATION and others which serve their interests. To secure the greatest coöperation from pharmacists, we cannot at this time entertain proposals to limit our membership or make it too restrictive. I consider it unwise and impracticable and the means of rendering ourselves less effective as a group, if we avoid our responsibility to all pharmacists or close our doors to their membership. We cannot afford to limit ourselves either in members or influence.

"Fortunately, we have recognized our own faults. We have served notice, so to speak, that the AMERICAN PHARMACEUTICAL ASSOCIATION does not approve practices that degrade the standing of pharmacy and will use our influence to keep them out. To do so is our job. We must secure and retain the confidence of the public, the coöperation and aid of those interested in public health and the assistance by legislation. We cannot ignore the conditions which prevail in pharmacy or

disregard our responsibility for some of them. The AMERICAN PHARMACEUTICAL ASSOCIATION should have close contact with all who profess to be pharmacists and represent them. If it is possible to encourage professional practice and ethics among the pharmacists of this country, reaching out to them with educational material through a new publication or otherwise, it must be done, and it is the duty of this organization to move in that direction.

"No matter what the causes or the compelling forces may be, commercialism is foreign to pharmacy and dangerous to its essential public health purpose. It is altogether possible for the AMERICAN PHARMACEUTICAL ASSOCIATION, with its prestige, its influence and its facilities, to combat it successfully, and give direction in the future, if it can have the professional ear and the membership of a majority of those engaged in pharmacy, so it could speak for and through them.

"May we attempt to arouse and awaken sufficient professional interest to accomplish that much? At no time has there been a greater need for numerical strength to support a worthy cause, and at no time have conditions been more unfavorable for securing new members; yet I hold this to be necessary at this time, and we should so plan, organize and execute our efforts so that the best results will obtain.

"Beyond this, I suggest that no better manual for our guidance can be found than the recommendations which have been presented to the ASSOCIATION by the former presidents in their annual addresses and by the standing committees in reports. For to attempt to do so would be to repeat what has been ably presented. We have only to make a thorough study of this constructive material, coördinate the thoughts and recommendations into a definite program, with a definite policy, to meet the demands of to-day, if it is diligently carried out.

"I have every confidence in the sincerity and the ability of the officers and members of the Council to act wisely and unselfishly. They have served long and well. I am delighted to have the opportunity to coöperate with them and serve you to the best of my ability in the interests of all of Pharmacy.

"In conclusion, may I express to you the hope that a material showing of progressive thought, action and coöperation in all fields of pharmacy may be recorded during the coming year."

President Costello advised Chairman Day that he had no precedent to go by but would at this time ask Dr. Day to install another member of the Council. Dr. Fischelis automatically became a member of the Council upon his retirement from the presidency. He was duly installed as a member of the Council.

Dr. Rufus A. Lyman addressed the meeting, as follows:

"I have a token of esteem for presentation to a member, from those who know him best. The problem these men had was to find the most proper man to make the presentation. It was desired that the presentation be made by a man who was independent. That was one reason why I was selected, because in the seven and twenty years that I have belonged to the AMERICAN PHARMACEUTICAL ASSOCIATION I have never held an office of any kind, not even a chairmanship of a committee."

Continuing Dr. Lyman explained that he is regarded as the Will Rogers of the pharmacy group, and he then went on in his traditionally humorous manner to entertain the members by relating additional reasons why he was chosen to make the presentation.

Dr. Lyman, at the conclusion of his highly entertaining remarks, called upon Dr. Robert P. Fischelis to accept the token, which the speaker further explained was presented to Dr. Fischelis by the members of the Mercer County (New Jersey) Pharmaceutical Association. In making the presentation of the beautiful gold watch, Dr. Lyman said: "Dr. Fischelis when you look into the face of this watch I hope that you will see beyond its hands and the glittering letters the affection of your friends and the admiration of every one who has a connection with pharmacy."

Dr. Fischelis in accepting the gift stated that he was deeply touched by the kindness of the Mercer County pharmacists who had chosen to honor him in this way. He also expressed his thanks to the pharmacists of Oregon and especially the Portland group for many courtesies extended to him and to Mrs. Fischelis during the convention week. The fact that Mrs. Fischelis' grandfather had fought in the Indian Wars in Oregon while he was in the Pacific North West with the "forty-niners" created a bond of friendship with Oregonians which had been cemented by this meeting.

Dr. Fischelis referred feelingly to the support of many friends in the activities of the past

year and indicated that expressions in correspondence with outstanding pharmacists in all parts of the nation had given him encouragement in undertaking the things he had tried to accomplish. Referring to the necessity for spending much of his leisure time in promoting the affairs of the ASSOCIATION he also paid tribute to the patience and forbearance of Mrs. Fischelis who had been willing to make necessary sacrifices to permit him to serve the ASSOCIATION. Finally he thanked the members and guests in attendance for their part in making the Portland Convention so successful.

Dr. Day remarked that at the time the officers were presented Dr. A. G. DuMez, the editor of the YEAR BOOK, was not present; he invited him to step forward and be presented.

Chairman of the Council, S. L. Hilton, was presented.

Dr. Day believed the cabinet was now complete.

Chairman Fischelis resumed the Chair and called on Secretary Kelly, who said: "I wish to express our regret for an unintended, an embarrassing omission, in that the name of a man to whom appreciation is due was not mentioned in the Resolution of appreciation to our hosts and I ask Frank Nau (Portland, Oregon) to rise and let us, in theatrical terms, 'give him a hand.' I am sure the president will insist, as will all present, that we correct the omission at once, by including his name in the published Resolution of appreciation."

Chairman Fischelis, in concluding the session thanked the local pharmacists, particularly Dean A. O. Mickelsen, for the splendid way in which they had handled the details of the convention.

The 83rd Annual Meeting of the AMERICAN PHARMACEUTICAL ASSOCIATION was then adjourned.

It may be necessary to defer the report of the House of Delegates to the next issue of the JOURNAL.

INTERNATIONAL PHARMACEUTICAL CONGRESS, 1885.

"A large section of our space is occupied this month with the history of the proceedings of the *sixth* International Pharmaceutical Congress, which held its sessions at Brussels from August 31st to September 5th (1885), inclusive. The event was one of singular interest... *Royalty patronized it;* a chief Minister of State presided over it; a *great City Council feted it; foreign governments appointed special delegates to its sessions;* and its proceedings were reported all over Europe. To an English observer all this was, as we have said, interesting and curious; perhaps more interesting and curious to us than to Continental pharmacists, who regard their profession from a different standpoint to that which we occupy. The pleasure and advantage of social intercourse, the new ideas suggested and imbibed, and the incidental benefits generally picked up on such an occasion are of the highest value... It is a point for consideration whether the Continental or the English view of pharmacy is the true one.—'Retrospect of Fifty Years Ago' in *Chemist and Druggist,* September 7th. The report differs from that of this year's Congress, but it is interesting to note that in some particulars there is similarity." (Italics ours.)

DISPENSING IN HOSPITALS.

According to *The Australasian Journal of Pharmacy,* the Council of the Pharmaceutical Society of New South Wales has been instrumental in obtaining the coöperation of the New South Wales Branch of the British Medical Association on the question of doctors undertaking dispensing or the supervision of dispensing in public hospitals. The Branch has now intimated its willingness to advise its members that they should not undertake dispensing or the supervision of it in public hospitals, where there is a chemist within a radius of two miles from the hospital. This coöperation is particularly gratifying, and may be regarded as the first step in the direction of obtaining dispensing in hospitals for qualified chemists. The position is one which has been causing organized pharmacy a considerable amount of concern for some years. The attitude of the New South Wales Branch is therefore very much appreciated in pharmaceutical circles.

The Australian Trained Nurses' Association has also signified its disapproval of nurses being called upon to undertake the responsibility of dispensing, so that, with the active disapproval of both the medical and nursing professions, pharmacists have strong claims for the recognition of their professional qualifications.

EDITORIAL NOTES

LOCAL BRANCHES, A. PH. A.

It is hoped to include a revised roster of the A. PH. A. Branches in the succeeding issue of the JOURNAL and the officers are requested to refer to pages XVIII and XIX of the July JOURNAL and mail revisions, if necessary, to the JOURNAL, 2215 Constitution Ave., Washington, D. C.—Thank you.

REMINGTON MEDAL AWARD AND DINNER.

The Remington Medal will be formally awarded to Samuel L. Hilton at a dinner which will take place at the Mayflower Hotel, Washington, D. C., on the evening of October 19th, at 7:00 P.M. The function is under the auspices of the District of Columbia Pharmaceutical Association, of the District Veteran Druggists Association, the District Board of Pharmacy, the members of the faculty of the School of Pharmacy, George Washington University, and the New York Branch of the AMERICAN PHARMACEUTICAL ASSOCIATION.

Dr. A. C. Taylor, 1733 Upshur St., N. W., Washington, D. C., is directing the arrangements and tickets can be reserved for the occasion. (The price is $3.00 per person.) A large attendance is expected.

TRI-STATE MEETING.

The states of Idaho, Oregon and Washington held a most successful Tri-State pharmaceutical convention and added immensely to the success of the meeting of the AMERICAN PHARMACEUTICAL ASSOCIATION. The duties of the officers did not prevent them from taking part in the meetings, but a number failed to register, hence, it is greatly regretted that their names are not recorded. The list of registrants is printed in the August JOURNAL, pages 679 and 680. It will please the ASSOCIATION to have their names for record and thanks are extended for the consideration.

The name of F. C. Felter, *Pacific Drug Review*, was not in the list of record; he was among those in attendance and active in the work of the convention.

THE EBERT PRIZE AWARDS.

At the Portland meeting of the AMERICAN PHARMACEUTICAL ASSOCIATION, Marvin J. Andrews was awarded the Ebert Prize, for his work on "Determination of the Reasonable Permissible Margin of Error in Dispensing." The first Ebert award was made in 1874 to Charles L. Mitchell; the Index of the 1874 volume of the PROCEEDINGS does not refer to the Ebert Prize for 1874 nor does the Collective Index, 1851–1902. Under "Funds of the ASSOCIATION," YEAR BOOK, volume for 1933, it is stated: "The Ebert Prize was awarded for the Year 1874, to Charles L. Mitchell." As there was difficulty in finding the report on this, *the first award*, search was made with the result that on page 782, of the 1875 volume of the PROCEEDINGS is a comprehensive report and the words of the award are:

"After full deliberation upon all the above points, and considering the labor involved in the experiments of the subject-matters of the three papers, the committee awards the Ebert Prize of the AMERICAN PHARMACEUTICAL ASSOCIATION, for the year 1874, to Mr. Charles L. Mitchell, for his essay "On the Active Principles of the Officinal Veratrums."

The paper is published in the volume of the PROCEEDINGS for 1874, pages 397–426. Mr. Mitchell graduated from the Philadelphia College of Pharmacy in 1872 and in medicine from the Jefferson Medical College, in 1880. He retired from the retail drug business in 1882 and engaged in the manufacture of pharmaceuticals. He was one of the founders of Medico-Chirurgical College and professor of Chemistry for two years. He died in 1910, but his name does not appear under "Obituary" in the Index; these notes, therefore, may have reference value.

The Collective Index for 1851 to 1902 does not list the "Ebert Prize" under that head and search must be made for the awards under other headings: F. B. Power, PROCEEDINGS for 1878, page 875; J. U. Lloyd, Volume 31, page 439. The first listing under "Ebert Prize" is in Volume 55, reference to page 313. Other references may usually be found under—"Committee," "Report," or the name of the recipient in connection with the paper presented.

USE OF LACTIC ACID FOR NON-ALCOHOLIC BEVERAGES.

The manufacturers of non-alcoholic beverages in Japan will use lactic acid in place of citric acid and tartaric acid, both of which

Japan has imported for many years and the demand has been on a steady increase in recent years. This decision has resulted from the recent experiments carried on by Dr. Yasuzo Hattori of the Imperial Hygienic Laboratory at Tokyo at the request of the Japan Non-alcoholic Beverages Association. His conclusion is that lactic acid has a greater power of sterilization and its taste is milder than that of the other two acids.

HUNGARIAN DRUGS.

Because of his country's position as the world's largest supplier of botanical drugs, Dr. Peter von Betegh, Hungary, pointed out that officials of the Hungarian government after the war laid down a policy calculated to raise the quality of botanical products. It established agricultural stations under the direction of scientists of high rank; the Hungarian Board of Agriculture maintains a department which is authorized to control the condition and quality of the goods which are in the hands of the collectors as well as those held by the traders. Proper cultivation, collection and preparation of botanical drugs so that they will meet with U. S. P. requirements rests in the hands of a staff of chemists whose services are at the disposal of all branches of the trade. Exports of botanical drugs from Hungary last year totaled 2,300,000 kilos, comprising more than 100 different items.—Abstracted from *Oil, Paint and Drug Reporter*, September 9th.

COTTON STRIPPER TESTED IN HARVESTING PYRETHRUM.

A cotton stripper altered to harvest pyrethrum will do the work successfully if the flower stalks are reasonably upright, the U. S. Department of Agriculture announced. The Bureaus of Agricultural Engineering and Plant Industry have just finished making tests with such a machine and with a grain binder at points in Maryland and Pennsylvania.

COMMITTEE TO COÖRDINATE HEALTH ACTIVITIES OF GOVERNMENT.

The interdepartmental committee to coordinate health and related welfare activities of the federal government is composed of: Josephine Roche, Assistant Secretary of the Treasury, Chairman; Oscar Chapman, Assistant Secretary of the Interior; M. L. Wilson, Assistant Secretary of Agriculture, and A. J. Altmeyer, Second Assistant Secretary of Labor. The president has instructed this committee to include within the scope of its work not only health activities, but closely related welfare activities as well. This Committee is to be composed of physicians and other technically trained persons within the government service to study and make recommendations concerning specific aspects of the government health activities. It is hoped to bring about a complete coördination of the government's activities in the health field.

PERSONNEL CHANGES IN SWEDISH PHARMACEUTICAL CIRCLES.

It is announced in *Farm. Revy* (Aug. 24, 1935) that King Gustav V has appointed the former head of the apothecary shop "Garnison" in Stockholm, Apothecary C. F. G. Söderberg, to be chief of the Apothecaries' Bureau of the Royal Medicinalstyrelse (the official Swedish medical control). The former bureau chief, Apothecary Ernst Matern, had requested retirement. Mr. Söderberg is a former teacher at the Swedish Royal Pharmaceutical Institute and has been long connected with the State Pharmaceutical Laboratory.

The King has also appointed Apothecary Harold Nilsson as head of the State Pharmaceutical Laboratory. Mr. Nilsson has been a teacher at the Royal Pharmaceutical Institute. Since 1930 he has been an assistant at the State Pharmaceutical Laboratory.

It may be noted that the Swedish pharmaceutical weekly, *Farmaceutisk Revy*, has changed editors, Apothecary A. Welander retiring and Apothecary John Quist taking his place as new editor. Mr. Quist's first issue is the number for the 17th of August (Vol. 34, No. 33).

At a meeting of the Nordiska Specialitetskommission in Stockholm in June it was decided to make up an "extra-pharmacopœia" (in common for the four Scandinavian countries) corresponding to the Ergänzungsbuch of the German pharmacopœia and citing test methods for non-official preparations. Among the commissioners are Prof. Baggesgaard Rasmussen, E. H. Madsen and K. A. Jackerott representing Denmark, Apothecary A. Nylander representing Finland, K. L. Schei and F. de Lemos representing Norway and Dr. A. Rising, S. Erikson and H. Nilsson representing Sweden.—*Courtesy Dr. Clifford Leonard and Dr. A. G. DuMez.*

PERSONAL AND NEWS ITEMS.

In transcribing from *press copy*, inadvertently, an error was permitted to pass through uncorrected in this section of the August JOURNAL, page 732, name should be Robert Koch. While the error will be recognized as such, the occurrence is regretted.

The United States has accepted an invitation to be officially represented at a League of Nations Conference on Biological Standardization to convene at Geneva on October 1st. The Department of State has appointed Chairman E. Fullerton Cook, of the United States Pharmacopœia Revision Committee, and Medical Director G. W. McCoy, Director of National Institute of Health, United States Public Health Service, to represent it at the conference. Chairman Cook advises that responsibilities in connection with pharmacopœial and other duties prevent his acceptance.

The *Industrial and Engineering Chemistry, News Edition*, of September 10th, published a sketch of **Dr. James H. Beal** by **Julius A. Koch.** The writer refers to his work in various state and national organizations and in the promotion of legislation, construction of the measures and his valuable services in pharmacopœial revision. He speaks of his love of nature and close observation which has resulted in a number of interesting collections; his shells comprise specimens that have made the collection outstanding and known to collectors and students throughout the world. The article refers to his activities in the AMERICAN PHARMACEUTICAL ASSOCIATION. An effort to abstract the sketch would fail in giving due credit, hence, these brief references are intended only to refer to the published sketch.

President **Robert R. Pierce,** of W. Va. Pharmaceutical Association, sends his first message as president, to the members. The bulletin, as usual, has been prepared by Secretary J. Lester Hayman.

Vice-Chairman C. T. Gilbert, of the House of Delegates, A. PH. A., visited the American Institute of Pharmacy, September 18th; he was accompanied by his mother. Among other visitors at the Headquarters, recently, were Herbert R. Woods, Evansville, Ind.; Mr. and Mrs. T. Zimmerman, Terra Haute, Ind.; Mr. and Mrs. Roger A. McDuffie and son, Greensboro, N. C.; George F. Reddish, St. Louis, Mo.; Milton Wruble, Kalamazoo, Mich.; George H. Parsons, Library Clerk, N. B. C., New York City; B. E. Holsendorf, U. S. Quarantine Station, Long Island; Pharmacist, U. S. Public Health Service; R. S. Hollingshead, NRA, Washington, D. C.

John S. Zinsser, for some time connected with Merck & Co., has been elected president of Sharp & Dohme, succeeding **A. Homer Smith.** John S. Zinsser is a son of Frederick G. Zinsser.—*Courtesy of Mr. Smith.*

OBITUARY.

EDWARD V. SHEELY.

Edward V. Sheely, aged 65 years, druggist and former postmaster of Memphis, and guiding light in Memphis' plans for the Tennessee Pharmaceutical Association's recent Golden Jubilee Convention, was killed August 21st, when his automobile was struck broadside by a truck at Huntington, W. Va. Mrs. Sheely was critically injured, and Edward V. Sheely, Jr., and his wife were severely cut and bruised in the accident. In tribute to the deceased, the druggists of Memphis closed their doors for a five-minute period during funeral services, for Mr. Sheely the afternoon of August 24th.

Born in New Oxford, Pa., February 14, 1870, Mr. Sheely spent his early youth in that city and there received his pre-college training. He graduated from the Philadelphia College of Pharmacy in 1892, two years later he moved to Memphis. During his first three years here he worked for James S. Robinson, late veteran member of the AMERICAN PHARMACEUTICAL ASSOCIATION, and then established a pharmacy at Vance and Lauderdale Streets, which to-day, after thirty-five years, is a Memphis landmark.—Data from *Southeastern Drug Journal.*

WILLIAM F. MICHEL.

William F. Michel, 61 years old, of Watertown, S. Dakota, died suddenly from heart attack, July 20, 1935. The deceased was a force in South Dakota pharmacy circles for many years; a former president of the State Pharmaceutical Association and for a number of years its secretary-manager. While holding the latter office he established *The Optimist*, and continued it until the time of his death. He was fearless in his editorials.

When the AMERICAN PHARMACEUTICAL ASSOCIATION met in Rapid City, Mr. Michel took a deep interest in the convention and during recess he was the center of groups of listeners.

SOCIETIES AND COLLEGES.

NATIONAL ASSOCIATION OF RETAIL DRUGGISTS.

The National Association of Retail Druggists convenes this week in Cincinnati (week of September 23rd). Among the features are the Drug Show, various conferences, including that on Prescription Economics; U. S. P. and N. F. Propaganda. U. S. Senator Millard E. Tydings, of Maryland, will be a speaker; others listed are Col. Charles H. March, of the Federal Trade Commission; R. L. Swain, E. F. Kelly, Robert P. Fischelis. Addresses are scheduled by Dr. James M. Doran, administrator of Distilled Spirits Institute, and Arthur J. Mellott, deputy commissioner of Internal Revenue.

NATIONAL WHOLESALE DRUGGISTS' ASSOCIATION.

The prohibition of below-cost sales, together with other plans for eliminating unfair trade practices, will be among the chief topics of discussion at the convention of the National Wholesale Druggists' Association to be held at the Greenbrier Hotel, White Sulphur Springs, West Va., September 29th to October 3rd. It is understood that Col. Charles March of the Federal Trade Commission will attend the convention and may discuss the fair trade practice rules which are being used to govern wholesale druggists.

NEBRASKA.

Working in coöperation with the Nebraska Pharmaceutical Association, local druggists, health associations and the local police authorities, state officials are moving to enforce two new drug regulations which went into effect on August 26th. The state department will be able to keep a record of violations under the uniform narcotic law. According to the director, very few druggists have sold narcotics illegally in the state. Another law regulates the sale and dispensation of barbital, hypnotic or somnifacient drugs, and will be administered under the state department of agriculture and collections. A plan is being worked out for enforcing the law in coöperation with state pharmaceutical and medical associations.

Will Brookley, of the Nebraska Pharmaceutical Association, was a visitor at the AMERICAN INSTITUTE OF PHARMACY on September 20th.

MONTANA.

Montana Pharmaceutical Association elected the following officers: *President,* George W. Sparrow, Anaconda; *First Vice-President,* Charles A. McFarland, Helena; *Second Vice-President,* Leonard Morrow, Fort Benton; *Third Vice-President,* George M. Gossman, Dillon; *Treasurer,* Charles Adams, Lodge Grass; *Secretary,* J. A. Riedel, Boulder.

WISCONSIN DRUG SHOW.

Sponsored by the Wisconsin Pharmaceutical Association and the Milwaukee County Association, a state wide drug show will be held October 28th to 30th, at the Schroeder Hotel to mark the 55th anniversary of organized pharmacy in Wisconsin.

ALUMNI LUNCHEON, PHILADELPHIA COLLEGE OF PHARMACY.

The Alumni of Philadelphia College of Pharmacy and Science gathered together at a luncheon on August 9th, at Portland, Ore., about fifty of their number were present.

ASSOCIATION OF MILITARY SURGEONS OF THE UNITED STATES.

The 43rd annual meeting of the Association of Military Surgeons of the U. S. will be held at the Waldorf-Astoria, New York City, October 3rd–6th. Col. J. W. Grissinger is chairman of the Committee on Arrangements.

INTERNATIONAL HOSPITAL ASSOCIATION.

Dr. Sidney Lamb, of Liverpool, has been elected *secretary-general* and *treasurer* of the International Hospital Association.

HOWARD UNIVERSITY.

Howard University, Washington's Government subsidized center of Negro learning and culture, has entered on its 68th year. In course of construction now is a new chemistry building which, when completed and equipped, will have cost about $626,000.00.

The nine divisions of the University are the Graduate School, the College of Liberal Arts, the School of Engineering and Architecture, the School of Music, the School of Religion, the Law School, the College of Medicine, the College of Dentistry and the College of Pharmacy.

LEGAL AND LEGISLATIVE.

MARYLAND LEGISLATION.

The pharmacy organizations of Maryland have mailed out the following information to physicians through its official publication—*The Maryland Pharmacist:*

"The Maryland Pharmaceutical Association, in coöperation with the Baltimore Retail Druggists' Association, takes real pleasure in the success of the pharmaceutical legislative program. Several bills were introduced in the General Assembly and passed for the purpose of bettering pharmaceutical service and to more adequately control the manufacture and distribution of drugs, medicines and poisons.

"Specifically, the new laws accomplish the following:

"Veronal, Phenobarbital and other salts of barbituric acid may only be obtained on prescription.

"Poisons may be sold only by registered pharmacists in strict conformity with the record keeping provisions of the law. The State Board of Health is empowered to restrict the sale of poisons to prescriptions when the public welfare so warrants.

"All manufacturers of drugs, medicines, toilet articles and dentifrices must operate under a permit issued by the Maryland Board of Pharmacy, and the technical qualifications of persons so engaged must be approved by the Board.

"All drug stores must possess at least the minimum of professional and technical equipment which the Board of Pharmacy prescribes.

" 'Medicine Shows' and 'Patent Medicine Shows' are made unlawful. Unsafe and indiscriminate distribution of drug samples is prohibited.

"It is the belief of these associations that these new laws will meet with the approbation of the medical profession, and that they will contribute greatly to a higher professional standard in the manufacture and distribution of drug products."

HIGHER RETAIL ETHICS.

Consolidated Brooklyn Retail Pharmacists, Inc., Brooklyn, has been chartered by the Secretary of State, at Albany, as a membership corporation without capital stock. The particular objects and purposes of the corporation as stated in its certificate are:

To work together for the purpose of raising the standards and ethics of retail pharmacists and druggists; to improve the working conditions of retail pharmacists and druggists; to endeavor to prevent unfair competition and unfair trade practices by retail pharmacists, druggists or others; to propose beneficial legislature for retail pharmacists and druggists and to coöperate with each other for the improvement of business in retail pharmacies and/or drug stores, and to do such further acts or things as may carry into effect the foregoing purpose. George Gottesman, W. W. Sitterley, Percy Goldman, George L. Chudow, J. M. Sarrett, Boris S. Prial, Brooklyn, are the incorporators. Alfred S. Perlstein, 66 Court St., Brooklyn, is attorney for the association.

MONTHLY REPORTS ON RETAIL DRUG STORE SALES.

The Department of Commerce expects to publish a series of monthly reports on sales in retail drug and grocery stores. The initial reports in the series will be confined to the states of Illinois, Indiana and Wisconsin, but the department hopes to extend them later to cover every state in the Union. The figures published are expected to reveal general trends, inasmuch as the stores which have agreed to coöperate cover both rural and urban areas.

Director Claudius T. Murchison, of the Bureau of Foreign and Domestic Commerce, delivered an address at the Boston Conference on Distribution, September 24th, on "Research Needs and Activities in Field by Distribution." The remarks of Director Murchison were timely. A few lines from the conclusion of the address are quoted:

"Whatever be the immediate aim of given research activities in the field of distribution, there should be in all of them implicit recognition of the essential unity of purpose which provides all agencies and all functions in the field of distribution. The increased effectiveness of any agency is a contribution to the welfare of all agencies."

CHINESE DEMAND FOR AMERICAN MEDICAL PREPARATIONS.

Chief C. C. Concannon, of the Commerce Department's Chemical Division, states that China is becoming increasingly important as a market for American medicinals. In 1934 China stood seventh among foreign countries as a producer.

BOOK NOTICES AND REVIEWS.

The Structure and Composition of Foods. By ANDREW L. WINTON, Ph.D., and KATE BARBER WINTON, Ph.D. This is Volume II of the valuable work—Vegetables, Legumes, Fruits, with more than 300 illustrations. The first volume dealt with Cereals, Starch, Oil Seeds, Nuts and Forage Plants. The publishers are John Wiley & Sons, Inc.; the price of Volume II is $15.00. The following is from the Preface: "The chemical sections of this volume, in addition to conventional analyses, record epoch-making discoveries, largely recent, on the occurrence and constitution of lesser-known constituents such as organic acids, pectins, natural flavors, colors (notably chlorophyl, carotenoids, lyochromes and anthocyanins), the chemical substances classed as vitamins, and minor mineral constituents. Complete unanimity of conclusions on certain points can hardly be expected; nevertheless, the matter available, on the whole, fills with remarkable completeness the gaps in the literature."

The sections with illustrations on microscopic structure represent the authors' original work in large part here recorded for the first time. The text covers 855 pages, the index 50 pages; careful attention is given to the inclusion of references. This authoritative work will be welcomed by chemists and libraries.

Pharmacists will find *Merck Medical Memoranda*, published monthly of value. It is issued in the form of cards and, no doubt, physicians consider the Memoranda useful references. Twenty-five reports are issued monthly. Data from a card will explain, for example: Anemia, Therapy, the treatment is given, the diet and a reference made to articles bearing on the subject. The annual subscription is $3.00.

Drug Standards Manual. The 1935 revised edition of the Manual, including Tolerances and Methods of Analysis, is now ready for distribution.

This compilation, prepared by the combined pharmaceutical contact committee of the American Drug Manufacturers' Association and the American Pharmaceutical Manufacturers' Association, with the coöperation of the Food and Drug Administration, United States Department of Agriculture, comprises seventeen monographs on "Ampuls," thirty-six monographs on "Compressed Tablets," and eighteen monographs on "Hypodermic Tablets." The price of the Manual is $3.00. It may be obtained from the American Drug Manufacturers' Association and the American Pharmaceutical Manufacturers' Association.

DICTIONARY OF AMERICAN BIOGRAPHY.

"The Council of Learned Societies kept in its hope for a quarter of a century the preparation of this work and finally found the way to carry that hope into a fruition that compares favorably with Great Britain's Dictionary of National Biography in the scholarly authority of the articles, in the factual accuracy, in the style of presentation and in the format and letterpress of the volumes. The whole patriotic undertaking is a credit to American learning. The sixteenth volume was published recently and the twenty volumes will be completed next year. The end now in sight praises the beginning of this high venture."

Among many known to pharmacy whose biographies have appeared are: Samuel P. Sadtler, Charles Rice.

The AMERICAN PHARMACEUTICAL ASSOCIATION is indebted to Drs. Glenn L. Jenkins and A. G. DuMez for an autographed copy of "Quantitative Pharmaceutical Chemistry."

J. Leon Lascoff has presented the library of the AMERICAN PHARMACEUTICAL ASSOCIATION with a "Physicians' Pocket Manual of Useful Drugs, Chemicals and Preparations," prepared by the U. S. P. and Propaganda Committee of the New York State Pharmaceutical Association.

PHYTO-PHARMACY.

The author, who is Professor at Louvain University, suggests that the pharmacist, by his training in chemistry and botany, is qualified to supply fungicides and insecticides, and give advice on the treatment of plant diseases. He thinks that a study of vegetable pathology, mycology and entomology should enable a pharmacist to replace the seedsman as a more intelligent supplier of certain products for use in horticulture and agriculture.—V. ESTIENNE, *The Pharmaceutical Journal*, August 31, 1935.

NOTICE TO CONTRIBUTORS TO THE JOURNAL AMERICAN PHARMACEUTICAL ASSOCIATION.

The following notice has been prepared from comments received from members of the Board of Review of Papers and of the Publication Committee.

Manuscripts should be sent to Editor E. G. Eberle, 2215 Constitution Ave., N. W., Washington, D. C.

All manuscripts should be typewritten in double spacing on one side of paper $8^1/_2$ x 11 inches, and should be mailed in a flat package—not rolled. The original (*not* carbon) copy should be sent. The original drawings, not photographs of drawings, should accompany the manuscript. Authors should indicate on the manuscript the approximate position of text figures. All drawings should be marked with the author's name and address.

A condensed title running page headline, not to exceed thirty-five letters, should be given on a separate sheet and placed at the beginning of each article.

The method of stating the laboratory in which the work is done should be uniform and placed as a footnote at end of first page, giving Department, School or College. The date when received for publication should be given.

Numerals are used for figures for all definite weights, measurements, percentages, and degrees of temperature (for example: 2 Kg., 1 inch, 20.5 cc., 300° C.). Spell out all indefinite and approximate periods of time and other numerals which are used in a general manner (for example: one hundred years ago, about two and one-half hours, seven times).

Standard abbreviations should be used whenever weights and measures are given in the metric system, *e. g.*, 10 Kg., 2.25 cc., etc. The forms to be used are: cc., Kg., mg., mm., L. and M.

Figures should be numbered from 1 up, beginning with the text-figures (line engravings are always treated as text-figures and should be designated as such) and continuing through the plates. The reduction desired should be clearly indicated on the margin of the drawing. All drawings should be made with India ink, preferably on white tracing paper or cloth. If coördinate paper is used, a blue-lined paper must be chosen. Usually it is desirable to ink in the large squares so that the curves can be more easily read. Lettering should be plain and large enough to reproduce well when the drawing is reduced to the width of a printed page (usually about 4 inches). Photographs intended for half-tone reproduction should be securely mounted with colorless paste.

"Figure" should be spelled out at the beginning of a sentence; elsewhere it is abbreviated to "Fig.;" per cent—2 words.

The expense for a limited number of figures and plates will be borne by the JOURNAL; expense for cuts in excess of this number must be defrayed by the author.

References to the literature cited should be grouped at the end of the manuscript under the *References*. The citations should be numbered consecutively in the order of their appearance (their location in the text should be indicated by full-sized figures included in parentheses). The sequence followed in the citations should be: Author's name (with initials), name of publication, volume number, page number and the date in parentheses. Abbreviations for journals should conform to the style of *Chemical Abstracts*, published by the American Chemical Society.

(1) Author, A. Y., *Am. J. Physiol*, 79, 289 (1927).

Papers presented at the Sections of the AMERICAN PHARMACEUTICAL ASSOCIATION'S annual meeting become the property of the ASSOCIATION and may at the discretion of the Editor be published in the JOURNAL. Papers presented at these Sections may be published in other periodicals only after the release of the papers by the Board of Review of Papers of the JOURNAL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION.

The Editor will appreciate comments from Board of Review and Committee on Publication, members, authors and others interested.

On account of Pharmacopœial, National Formulary and ASSOCIATION *matter, the number of pages in this section has been limited; in succeeding issues, it is hoped to have the usual number of pages; this applies also to the Roster.*